

**MOST COMPLETE  
LINE OF DRYERS,  
STRAINERS AND  
LARGE VALVES**

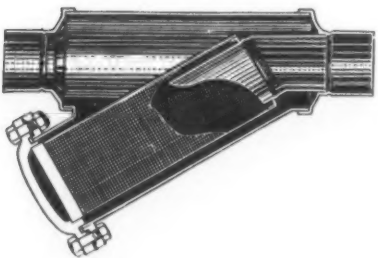
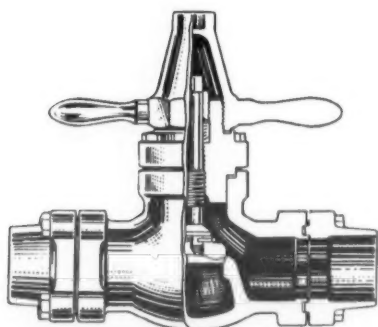
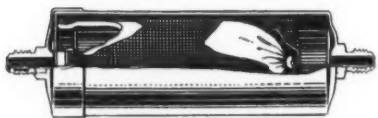
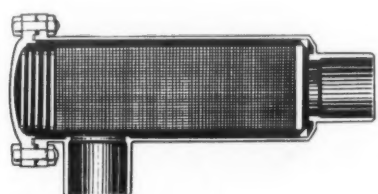
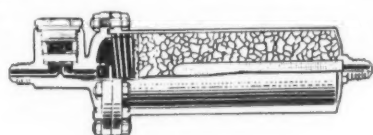
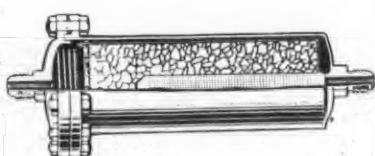
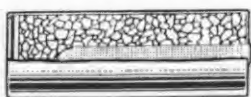
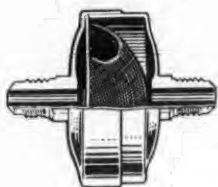
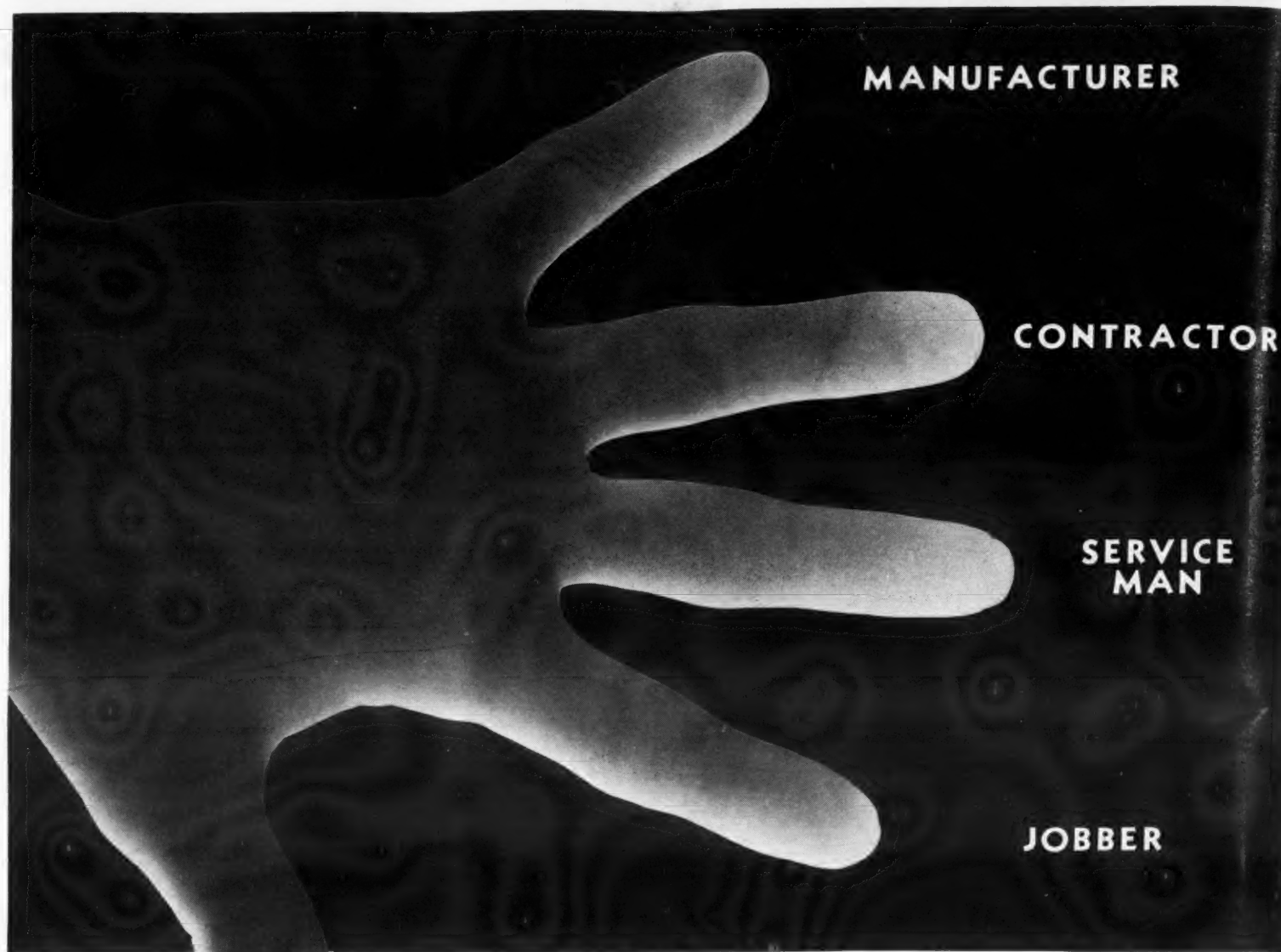


PHOTO BY..  
peter j. basil



**MANUFACTURER**

**CONTRACTOR**

**SERVICE  
MAN**

**JOBBER**

## To One and All

### HENRY IS THE DEPENDABLE SOURCE

The success of any manufacturer is measured by the thorough manner with which it serves industry. In the field of air conditioning and refrigeration, Henry is serving the country's leading manufacturers. It is their dependable source for valves, dryers and strainers used in original equipment.

Contractors and service men have found that Henry's advanced design, exclusive features and complete range of available types and sizes, simplify installation and servicing problems. With such wide trade acceptance, that has resulted in breaking all previous sales records, it is only natural that Henry is the favorite line with jobbers everywhere.

#### STOCKED BY THESE LEADING JOBBERS

Atlanta, Ga.....Leo S. Bosarge Co.	Detroit, Mich.....Borg Warner Service Parts Co.	Oklahoma City, Okla.....Mideke Supply Co.
Baltimore, Md.....Clendenin Bros., Inc.	Fort Wayne, Ind.....H. J. Schroeder Co.	Philadelphia, Pa.....Victor Sales Corp.
Beaumont, Texas.....Standard Brass & Mfg. Co.	Fort Worth, Tex.....McKinley Refrig. Sup. Co.	Pittsburgh, Pa.....William M. Orr Co.
Binghamton, N. Y.....Service Supply Co.	Houston, Tex.....D. C. Lingo Co.	Pittsburgh, Pa.....Williams & Co., Inc.
Brookline, Mass.....Refrigeration Sup. Co.	Houston, Tex.....Walter Refrigeration Sup. Co.	Portland, Ore.....Jerry Dimick Co.
Buffalo, N. Y.....Root, Neal & Co.	Knoxville, Tenn.....Leinart Engineering Co.	St. Louis, Mo.....The Spangler Co., Inc.
Chicago, Ill.....Acme Supply Co.	Indianapolis, Ind.....F. H. Langenkamp Co.	St. Louis, Mo.....Harry Alter Co.
Chicago, Ill.....Airo Supply Co.	Kansas City, Mo.....Forslund Pump & Machinery Co.	St. Louis, Mo.....Brass & Copper Sales Co.
Chicago, Ill.....Harry Alter Co.	London, Ont., Canada.....Refrigeration Supplies Co., Inc.	St. Paul, Minn.....Thermal Service Co.
Chicago, Ill.....Automatic Heating & Cooling Sup. Co.	Madison, Wis.....Gustave A. Larson Co.	St. Joseph, Mo.....Bristol Supply Co.
Chicago, Ill.....H. W. Glythe Co.	Memphis, Tenn.....United Refrig. Supply Co.	San Antonio, Tex.....Westbrook Carburetor Electrical Co.
Chicago, Ill.....Borg Warner Serv. Parts Co.	Milwaukee, Wis.....Chase Brass & Copper Co.	South Bend, Ind.....F. H. Langenkamp Co.
Chicago, Ill.....H. Channon Co.	Milwaukee, Wis.....Refrigeration Specialty Co.	South Bend, Ind.....South Bend Supply Co.
Chicago, Ill.....Fred C. Kramer Co.	Minneapolis, Minn.....Refrigeration & Industrial Sup. Co.	Springfield, Mass.....C. P. Payson Co.
Charlotte, N. C.....Henry V. Dick & Co.	New Orleans, La.....The Spangler Co., Inc.	Springfield, Ill.....United States Electric Co.
Cincinnati, O.....Merkel Bros. Co.	New York, N. Y.....A. P. Miller Sup. Co., Inc.	Syracuse, N. Y.....Syracuse Supply Co.
Cincinnati, O.....Williams & Co., Inc.	New York, N. Y.....Airo Supply Co.	Syracuse, N. Y.....Syracuse Equipment Co.
Cleveland, O.....Refrigeration Supplies Distributor of Cleveland, Inc.	New York, N. Y.....Harry Alter Co.	Toledo, O.....Heat & Power Engineering Co.
Cleveland, O.....Williams & Co., Inc.	New York, N. Y.....Paramount Elec. Sup. Co.	Tulsa, Okla.....Machine Tool & Supply Co.
Dallas, Tex.....Electromotive Co.	New York, N. Y.....Servicemen Supply Co.	Washington, D. C.....Refrigeration Supply Co.
Davenport, Ia.....Republic Electric Co.	Oklahoma City, Okla.....Macklanburg Brass & Copper Co.	Wilkes-Barre, Pa.....Radio Service Co.
Dayton, O.....Allied Refrigeration Co.		Winnipeg, Man., Canada.....Winnipeg Refrigerator Parts
Detroit, Mich.....J. M. Ohere, Inc.		Worcester, Mass.....Standard Supply, Inc.

#### FACTORY REPRESENTATIVES

Atlanta, Ga.....Barton D. Wood, Inc.	Los Angeles, Calif.....Pacific Scientific Corp.	St. Louis, Mo.....R. H. Spangler
Des Moines, Ia.....Delavan Engineering Co.	Miami, Fla.....Barton D. Wood, Inc.	San Antonio, Texas.....E. G. Langhammer
Detroit, Mich.....J. M. Ohere	New Orleans, La.....C. H. Boyd	San Francisco, Calif.....Pacific Scientific Corp.
Jacksonville, Fla.....Barton D. Wood, Inc.	New York, N. Y.....C. W. Hudziets	Seattle, Wash.....Pacific Scientific Corp.
Kansas City, Mo.....O. A. Forslund	Philadelphia, Pa.....A. H. Holcombe, Jr.	

#### EXPORT SALES REPRESENTATIVES

New York, N. Y.....Melchior, Armstrong, Dessau Co.

# HENRY VALVE CO.

1001-19 NORTH SPAULDING AVENUE • CHICAGO, ILLINOIS



## REFRIGERATION NEWS

Trade Mark Registered U. S. Patent Office. Established 1926 as Electric Refrigeration News  
Member Audit Bureau of Circulations. Member Associated Business Papers.VOL. 22, No. 11, SERIAL NO. 451  
ISSUED EVERY WEDNESDAYEntered as second-class  
matter Aug. 1, 1927

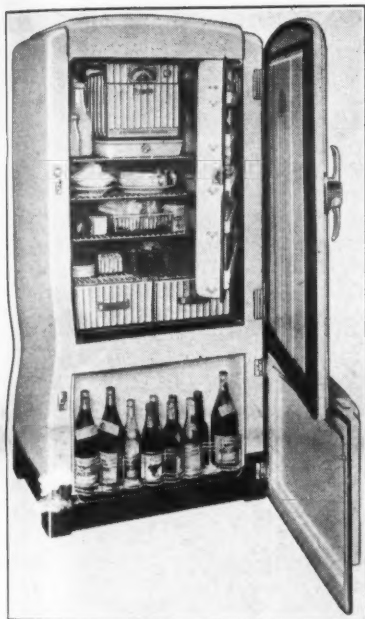
DETROIT, MICHIGAN, NOVEMBER 10, 1937

Copyright, 1937, by  
Business News Pub. Co.FOUR DOLLARS PER YEAR  
TWENTY CENTS PER COPY**Conservador Is  
Used on 4 Units  
By Fairbanks****Nine Models in Three Series  
Make Up 1938 Line  
Of Refrigerators**

INDIANAPOLIS—Nine models in three series of household electric refrigerators, five of them without the Conservador feature, will be in the 1938 line which Fairbanks, Morse & Co.'s home appliance division will present to its distributors at a preview convention here Nov. 15 and 16.

Two models, EX-4 and EX-6, with capacities of 4 and 6 cu. ft., respectively, will be the line's "leader" models.

The second or Deluxe series will

**New Conservador**

consist of three models, with capacities of 5, 6, and 7 cu. ft.; and the third or Super Deluxe series will include four models of 4, 5, 6, and 7-cu. ft. capacities.

A new type non-refrigerated reserve storage compartment, which is

(Concluded on Page 3, Column 1)

**Norge Distributors Meet  
Nov. 15-16 in Detroit**

DETROIT—Representatives of Norge distributorships both in this country and abroad will gather here Nov. 15 and 16 to attend the convention which Norge division of Borg-Warner Corp. has planned as a means of introducing its 1938 appliance lines to its distributor organization.

Convention headquarters, product

(Concluded on Page 2, Column 5)

**Refrigeration Machinery  
Group Re-elects Fernald**

CHICAGO—J. M. Fernald, vice president and general manager of the Baker Ice Machine Co., Omaha, was re-elected president of the Refrigerating Machinery Association at its recent meeting here.

A. H. Baer, general sales manager

(Concluded on Page 2, Column 4)

**Refrigeration Sales Pass  
'36 Total in 9 Months**

DETROIT—With a new all-time record of 94,400 units during September, world sales of household electric refrigerators by manufacturers to distributors and dealers during the first nine months of 1937 totaled 2,265,500 units to pass by 42,500 the total for all of 1936, according to

(Concluded on Page 2, Column 5)

**Trade-Ins Cause No  
Worry, Say Store  
Heads at Clinic**

CLEVELAND, Nov. 9 (Special Wire to AIR CONDITIONING AND REFRIGERATION NEWS)—That the trade-in "bugaboo" may turn out to be a self-liquidating problem was indicated in the sixth annual merchandising clinic sponsored here this week by the General Electric Co. when a number of department store representatives reported that the demand for used refrigerators exceeds

(Concluded on Page 7, Column 1)

**Service Engineers  
Have Big Turnout**

CHICAGO—With the biggest turnout in its history jamming the meeting room at the Stevens hotel here, the Refrigeration Service Engineers Society on Nov. 3, 4, and 5 held its fourth annual convention, which was marked by the inauguration of several steps designed to help the service engineer in the conduct of his business, and by the presentation of a number of informative papers dealing with the technical aspects of the service engineer's work.

Buffalo and Pittsburgh put in the

(Concluded on Page 5, Column 1)

**Revised Chicago Code  
Passed at Hearing**

CHICAGO—Changes in the proposed Chicago refrigeration code, made as a result of a series of conferences between city officials and objectors to the ordinance during the last six weeks, were unanimously approved at a public hearing Nov. 5 in the City Hall.

Revised code will now be submitted to the City Council, and it is expected that the ordinance will be adopted and made law within about 30 days.

Three major and six minor changes were made in the wording of the

(Concluded on Page 2, Column 1)

**Snyder Appointed  
Appliance Sales  
Manager of G-E**

NEW YORK CITY—Carl M. Snyder, a pioneer in ensemble selling of electrical appliances for the home and manager of the General Electric Home Bureau here, has been appointed manager of appliance sales for General Electric Co., effective immediately, it has been announced by C. E. Wilson, vice president of the company.

In his new position, Mr. Snyder is responsible for the sale of all products of the household appliance division, including home laundry equipment, vacuum cleaners, clocks, fans, and heating devices; for products of the radio division; and for products of the specialty appliance

(Concluded on Page 3, Column 1)

**Convention Stories and  
Pictures in This Issue**

Reports on the conventions last week in Chicago of the Refrigeration Parts and Supplies Manufacturers Association, the National Refrigeration Supply Jobbers Association, and the Refrigeration Service Engineers Society, are published starting on page 1 of this issue and continuing to pages 24, 18, and 15, respectively.

Pictures of the exhibits held in conjunction with these conventions are published on pages 18, 19, and 24. Other convention pictures will be found on pages 8, 10, 11, 15, 20, and 21.

The reports of two comprehensive papers presented at the service engineers' meeting are published on pages 16 and 17, and 20 and 21.

The editors express their gratitude to Austin Jones, manufacturers' representative in Omaha and an enthusiastic and proficient amateur photographer, who took most of the pictures published in this issue; and also to Irving Alter of the Harry Alter Co., who furnished some fine candid camera portraits.

**Manufacturers of Parts Decide  
To Sponsor 1938 Exhibition;  
Jobbers Discuss Distribution****Colyer Re-elected Head  
Of Manufacturers;  
By-Laws Changed**

CHICAGO—A decision to have the association sponsor its own trade show, and the approval of a number of significant changes in the association's by-laws, were the chief accomplishments at the annual meeting of the Refrigeration Supplies and Parts Manufacturers' Association held Nov. 2 and 3 at the Stevens hotel here.

Action on the sponsorship of an exhibit by the association was taken by the members after they had heard the report of a special committee on exhibits and exhibit arrangement, and had listened to authorities on trade association management who

(Concluded on Page 24, Column 1)

**ACMA Quarter Sales  
Total \$13,239,425**

WASHINGTON, D. C.—Installations by members of Air Conditioning Manufacturers' Association during the third quarter of 1937 topped those of the same period of 1936 by 16.5%, installed cost of equipment sold by them totaling \$13,239,425 compared with \$11,354,956 in the third quarter a year ago, reports William B. Henderson, vice president.

Installed cost of equipment sold by ACMA members during September was \$2,460,855, as compared with \$2,796,016 in the month a year ago, a decrease of 11.9%.

Total business done by association members for the first nine months of this year is far ahead of the same three quarters of 1936, installed cost being \$74,036,822, compared to \$38,947,104, an increase of 90.09%. This is also 48.24% greater than the total reported for all of 1936, which was \$49,942,301.

**Membership Qualification  
Changes Considered  
By Jobbers**

CHICAGO—Members of the National Refrigeration Supply Jobbers' Association in two well-attended all-day sessions Nov. 1 and 2 at the Stevens hotel here, took further action to clarify the qualifications for membership originally set up two years ago, and made a number of suggestions to manufacturers of refrigeration parts concerning distributing practices and discount schedules.

With Robert Spangler of The Spangler Co., St. Louis, retiring president of the association in the chair, jobbers who had come from as far West as California, as far East as Halifax, as far North as Winnipeg, and as far South as Florida, expressed themselves fully about the policies and future of the association, and the mutual problems of their business.

At the opening session Nov. 1, H. W. Small of The Thermal Co., Inc.,

(Continued on Page 18, Column 5)

**Stewart-Warner to Show  
New Line Nov. 11-12**

CHICAGO—Stewart-Warner Corp.'s 1938 line of refrigerators will be demonstrated to more than 300 distributors and salesmen from all over the country at the annual conference of the company's refrigerator division in the Edgewater Beach hotel here Nov. 11 and 12, according to John Ditzell, radio and refrigerator sales manager.

Mr. Ditzell said that the new refrigerators will be promoted by

(Concluded on Page 2, Column 4)

**Dayton Includes 7 Model  
In '38 Refrigerator Line**

BUFFALO—Seven models in two newly designed lines of Dayton electric refrigerators, incorporating new style and convenience features, have been announced for 1938 by Heinz & Munschauer. The company's policy permits the units to be merchandised under the Dayton name, or as "private brands" by large retailers.

The new Daytonos, styled by Federico, have V-shaped doors and

(Concluded on Page 3, Column 2)

**ASRE & ASHVE Plan Joint  
Session at N. Y. Meeting**

NEW YORK CITY—Thirty-third annual meeting of the American Society of Refrigerating Engineers will be held in the Hotel Roosevelt here Jan. 25 to 27. Adding interest to the society's regular program will be a joint session with the American Society of Heating and Ventilating Engineers, and the International Heating and Ventilating Show, which will run concurrently with the engineering society meetings.

All A.S.R.E. meetings, except the

(Concluded on Page 3, Column 2)

**Longyear to Head McCord  
Refrigeration Sales**

DETROIT—Appointment of F. H. Longyear as manager of the refrigeration and air-conditioning department of McCord Radiator & Mfg. Co., in charge of all that department's activities, has been announced by Morrill Dunn, McCord vice president.

Mr. Longyear was graduated from Purdue university in 1914, and served

(Concluded on Page 2, Column 3)

**They Guide the Refrigeration Supply Jobbers**

These are the officers and directors who will direct the activities of the National Refrigeration Supply Jobbers Association during the coming year, pictured here just as they were about to start their first board meeting. Seated from left to right are Henry W. Merkel of the Merkel Bros. Co., Cincinnati, newly elected president of the association; F. A. M. Dawson of

Refrigeration Supplies Co., London, Ontario, Canada, a director; Leo H. Gorton of Machine Tool & Supply Co., Tulsa, Okla., vice president; D. C. Lingo of the D. C. Lingo Co., Houston, Texas, a director. Standing are Directors C. F. "Sandy" Pratt of the California Refrigerator Co., San Francisco; H. S. McCloud, Williams & Co., Inc., Pittsburgh; Arnold Dessau, Mel-

chior, Armstrong, Dessau Co., New York City; Irving Alter, the Harry Alter Co., Chicago; and F. H. Langsenkamp, Jr., the F. H. Langsenkamp Co., Indianapolis; S. R. Bush of the firm of Ortman, McClure & Hadden, association management engineers; Robert H. Spangler, the Spangler Co., Inc., St. Louis, retiring president of the association and board member.



## Chicago Code Given Approval at Hearing

(Concluded from Page 1, Column 2) ordinance as a result of the conferences between officials of the Department for the Inspection of Steam Boilers, Unfired Pressure Vessels, and Cooling Plants, charged with administration and enforcement of the code, and objectors to the ordinance as it was originally passed by the City Council.

First of these was the inclusion of the following paragraph:

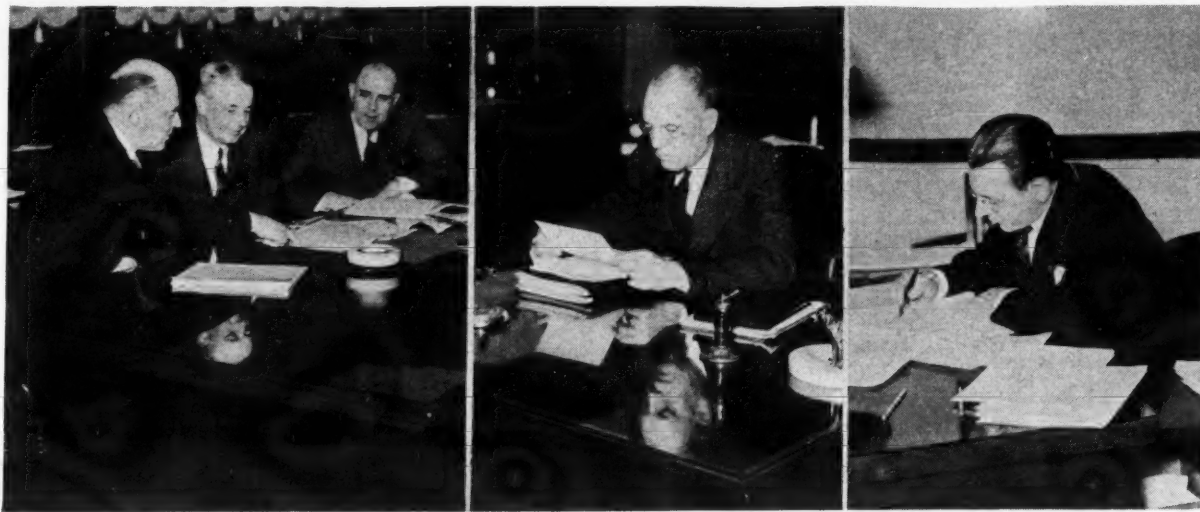
"Existing plants installed in accordance with the revised Chicago Code of 1931, and in operation previous to the date of passage of this ordinance, will be required to make only such alterations, replacements, and changes and do such work on the refrigerating systems which, due to obsolescence and wear and tear have become, or are likely to become, dangerous to public health or safety, it being the sense of this requirement that the refrigerating systems shall be required to be maintained in as safe a condition as when they were originally installed."

Under the code's provision for permits, these words were added: "No permit shall be required for emergency repairs." Defining this exception, Gerald Gearon, chief deputy inspector of the Department for the Inspection of Steam Boilers, Unfired Pressure Vessels, and Cooling Plants, said that no permit would be required for replacement of a connecting pipe, for example; but that if a new compressor was to be installed, the permit provision would be enforced.

In the original code, broad powers had been delegated the department "to make reasonable regulations or rules interpreting or clarifying the requirements which are definitely prescribed," and "to adopt reasonable rules to define the quality and regulate the use of materials and combination of materials permitted but not particularly defined or regulated herein, or in any other general ordinance of the city, in order to assure the construction of such refrigeration systems in the most workmanlike manner, the standard being the best practice, custom, and usage prevailing in the industry."

As revised in the present ordinance presented to the council, the power of the department is limited so that it "shall have the power to adopt reasonable rules to determine the quality of materials and workman-

## Stewart-Warner Executives Prepare for Convention



(Left) J. E. Otis, Jr., president of Stewart-Warner Corp., in executive conference with J. S. Knowlson, chairman of the board (center) and

F. A. Ross, vice president and works manager (right). (Center) F. A. Hiter, vice president and general manager, checks over some early-morning sales reports.

(Right) G. Treffelsen of Stewart-Warner's refrigeration sales department is busy setting up quotas for the new 1938 Stewart-Warner refrigerator line.

ship required herein, or in other general ordinances of the city, not inconsistent with the provisions of the ordinances, provided that any standards adopted by such rules shall be consistent with the practice, custom, and usage prevailing in the industry involved."

The proposed code, result of about two years' work on the part of technical experts representing manufacturers, city departments, and other groups, was passed by the City Council on Aug. 5. Before it went into effect, however, so much opposition had developed among business groups that the ordinance was recalled by the council, and further hearings ordered.

Participating in the public hearings on the code were representatives of Chicago Master Steamfitters Association, the Chicago Real Estate Board, Retail Grocers and Butchers Association, Steamfitters Protective Association, Greater Chicago Hotel Association, General Refrigeration Sales Co., Swift & Co., Wilson & Co., Armour & Co., Retail Druggists Association, Cook County Retail Council, Chicago Retail Hardware Association, Chicago Restaurant Association, Allied Florists Association of Illinois, Peoples Gas, Light & Coke Co., Commonwealth Edison Co., Servel, Inc., Chicago Ice Cream Manufacturers Institute, North Shore Hotel Association, Refrigeration Service Engineers Society, and others.

## '38 Cabinet Production Started by Midwest

GALESBURG, Ill.—Production of Midwest Stamping & Enameling Co.'s 1938 household refrigerator cabinets began at the company's enlarged factory here last week.

Capacity has been increased from 350 to 600 cabinets daily by the addition of new equipment in the metal, welding, grinding and polishing, spot-welding, Bonderizing, painting, and assembly departments.

To speed up production 450 feet of power-driven conveyor has been added to the assembly line, a new metal building has been constructed and equipped with an extension for the overhead crane; presses have been rearranged and augmented by 30 new machines; 400 feet of overhead conveyor has been installed in the porcelain department; each of the two high-bake Dulux ovens has been extended to a length of 260 feet; and a Butane gas installation system has been set up to furnish fuel for these ovens and the porcelain furnaces.

In addition to manufacturing cabinets on a contract basis, Midwest makes standard models with capacities ranging from 4.2 to 19 cu. ft.

## Longyear Heads McCord Refrigeration Sales

(Concluded from Page 1, Column 5) in the air service during the World war.

His first job was with Ford Motor Co. as assistant superintendent of outside operations. He then served successively as production engineer for Timken Axle Co., chief engineer of Detroit Lubricator Co., assistant sales manager of Bridgeport Brass Co., and vice president of Thermal Engineering Co.

He has been with McCord for three years in the sales department and as production engineer in refrigeration and air conditioning.

## Stewart-Warner Plans More Advertising

(Concluded from Page 1, Column 5) more than twice as much national advertising as was used in 1937. The regular Stewart-Warner radio program, featuring Horace Heidt and his Brigadiers, will be maintained throughout 1938, said Mr. Ditzell, but will be switched to a Tuesday night spot over a coast-to-coast NBC network. The present Monday night program is a CBS broadcast.

Stewart-Warner also will stage a sustained magazine advertising campaign for the refrigerators, with color advertisements in Saturday Evening Post and Collier's extending through the peak refrigerator buying season. Plans for local advertising have been extended, with newspapers, billboards, and other forms of retail advertising scheduled.

## Fernald Reelected Head Of Machinery Group

(Concluded from Page 1, Column 1) of the Carbondale division of Worthington Pump & Machinery Corp., Harrison, N. J., was re-elected first vice president of the association. William B. Henderson, Washington, D. C., was retained as executive vice president.

S. E. Lauer, vice president of York Ice Machinery Corp., York, Pa., was re-appointed chairman of the association's standards committee.

Continuation of RMA's program of technical standardization work was announced by Mr. Fernald as an integral part of the organization's plans for the coming year.

The great spread of air conditioning is opening up new fields of opportunity for the introduction of refrigerating machinery, Mr. Fernald said, and the association will center its engineering and financial resources on development of its market.

## Industry Sales Pass '36 Total in 9 Mos.

(Concluded from Page 1, Column 1) estimates by AIR CONDITIONING AND REFRIGERATION NEWS.

World sales during 1936 were estimated at 2,223,000 units. Previous record for September was set in the same year, when sales reached an estimated total of 90,000 units.

This year's nine-month household refrigerator sales mark is 320,500 higher than that for the same period of 1936, when sales were estimated at 1,945,000 units.

Sales by 15 member companies reporting to the Household Refrigeration Section of National Electrical Manufacturers Association (Nema) totaled 87,842 units during September, passing by more than 4,000 the 83,715 units reported sold by the same number of companies during September, 1936.

This also sets a new high mark for Nema sales during September, since last year's total was the previous record for the month. Sales by Nema companies for the first nine months of the year total 2,116,612.

Most popular models in the lacquer-finished units were in the 4 to 7-cu. ft. class, while porcelain-finished models were most popular in the 5 to 10-cu. ft. sizes.

Commercial refrigeration equipment sales, as reported to Nema's Commercial Refrigeration Section by 15 member manufacturers, totaled 11,616 units during September, a slight increase over the 11,396 units reported by the same number of companies for September last year.

Total Nema commercial sales for the first nine months of this year is 230,320 units. While the September total is some 2,000 units below the 14,114 units reported sold during August of this year by Nema firms, it is thought to represent only the usual seasonal sales decline.

Sales of pressure water coolers totaled 1,189 units during the month, bringing the nine months' total to 25,590 units; ice cream cabinet sales totaled 2,639 in September, for a nine months' total of 30,473; beverage coolers showed sales of 1,023 units for the month, and sales through September of 37,173 units. Self-contained air conditioner sales for the nine months were 9,812 units.

## Norge Plans National Distributors Meeting

(Concluded from Page 1, Column 1) displays, and general activities will be at the Statler hotel, while convention meetings will be held in the Wilson theater. A banquet in the Statler's grand ballroom has been planned as a climax of the first day's activities.

Following the two-day session of meetings, individual conferences will be held at the Statler between distributors and factory executives.

Paul B. Zimmerman, Norge vice president and general sales manager, will conduct the convention, assisted by departmental heads and other Norge executives.

## CONDENSERS EVAPORATORS

34 years specialized experience in this field has qualified us to give you intelligent, practical engineering cooperation on both electric refrigeration and air conditioning applications, large and small.

LONG MANUFACTURING DIVISION  
BORG-WARNER CORPORATION  
DETROIT, MICH.  
WINDSOR, CAN.

# LONG

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

No. 1 of a Series of Curtis Advanced Engineering Features.

## TIMKEN TAPERED ROLLER MAIN BEARINGS

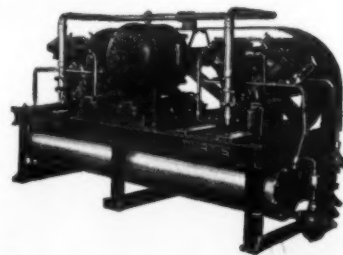
Increase efficiency—thermal and mechanical due to less friction.

Take end thrust due to crankcase and seal spring pressure.

Insure longer life.

Provide for adjustment when needed (at such time plain bearings need replacement).

Yes, they are more expensive (but not to you). This is just one example of the engineering originality and extra value incorporated in Curtis Condensing Units that contributes so much to their dependable, care-free performance.



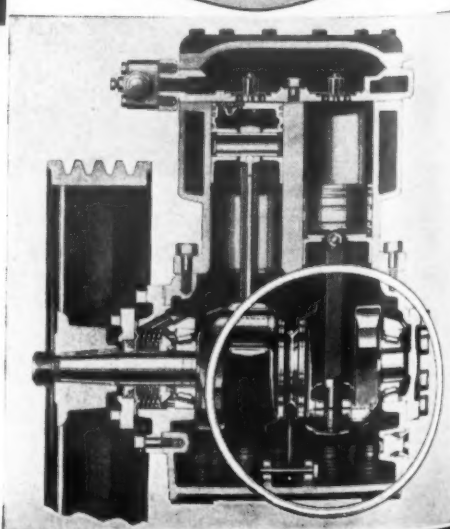
CURTIS REFRIGERATING MACHINE CO.

Division of Curtis Manufacturing Co.

1912 KIENLEN AVENUE

ST. LOUIS, MO.

TIMKEN TAPERED ROLLER BEARING EQUIPPED



# CURTIS

"Builders of Condensing Units Since 1922"

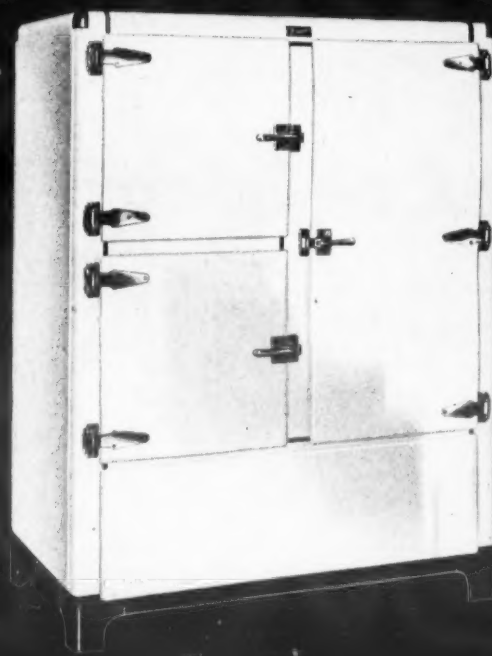
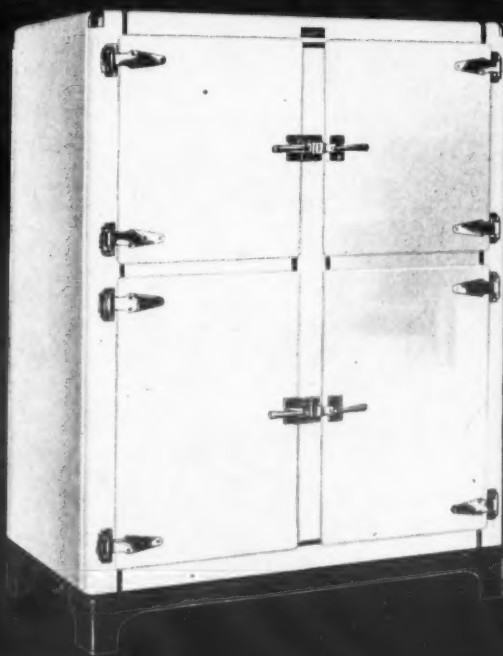
Represented in Canada by  
Canadian Curtis Refrigeration Co., Ltd.  
20 George St., Hamilton, Ont., Can.



## A black and white portrait of a man with short, dark hair, wearing a dark suit jacket, a white shirt, and a patterned tie. He is looking slightly to the right of the camera with a neutral expression. The background is dark and out of focus.

A black and white photograph of an open, empty metal safe. The safe has two main doors, each divided into four smaller compartments by a horizontal and vertical latch. The compartments are secured by small, dark, conical latches. The safe is open, showing the interior of the doors and the central locking mechanism.

# AC 64



# AC 40

# AC 32

# SEEGER REFRIGERATOR COMPANY

ST. PAUL 4C 4C 4C 4C 4C 4C 4C 4C 4C 4C MINNESOTA

BRANCHES: NEW YORK, BOSTON, CHICAGO, LOS ANGELES, SAN FRANCISCO



## MAJOR APPLIANCES

### 311,223 Ranges Sold In 9 Months by 12 Companies

NEW YORK CITY—Sales of 311,223 electric ranges to distributors and dealers were reported for the first nine months of the year by 12 member companies of the National Electrical Manufacturers Association. This is an increase of more than 36% over the 228,129 unit sales reported by these companies for the same period of 1936.

Dollar volume of nine-month range sales this year, as reported by Nema members, was \$22,163,839, a 40% increase over the \$15,830,233 evaluation placed upon ranges sold during the first three-quarters of 1936.

September shipments in 1937 totaled 27,180 units valued at \$2,019,019, against 25,142 units valued at \$1,746,023 for September of last year. Average price of units shipped during September of this year was \$74.28, compared to \$69.45 for last September.

Average price of units shipped during the first nine months of this year was \$71.22.

### Higher Priced Washer Sales Increase

CHICAGO—Buying of electric washers in the higher price brackets is increasing, reports the American Washing Machine Manufacturers Association in showing shipments for the first eight months of 1937 of 1,245,520 units, compared with 1,204,227 for the same period of last year.

Washers selling at \$70 or more showed an increase of 36.3% in the first eight months of this year, the association reported. Shipments of this class of goods totaled 514,822 units or 41.3% of all factory deliveries this year, compared with 377,600 or 31.3% in 1936.

August washer shipments declined 14.6% from those of the same month last year, according to J. R. Bohnen, secretary of the association, amounting to 148,206 units, 25,472 less than the 173,678 reported for the same month last year.

Ironer shipments for August gained 10% over the 1936 total for the month, showing 19,319. Shipments of ironers for the first eight months totaled 128,589 units.

### Large-Sized Range Is Put on Market by General Electric

CLEVELAND—Imperial 60, a new General Electric domestic range with 25% greater capacity than any previous G-E household model, has been announced by the range and water heater sales section of G-E's appliance and merchandise department.

This new range is intended for use in homes where entertainment is done on a lavish scale.

Imperial 60 is 5 ft. long and is finished in black and white porcelain enamel. Its Monel metal cooking top contains six flattened Calrod surface units, each of which has its own indicator light.

It also has two separate G-E Tripl-Ovens, each of which contains a speed oven, a super broiler, and a master oven capable of accommodating two 15-lb. turkeys at one time. Each Tripl-Oven is equipped with automatic interior lighting.

All controls are grouped on an etched chromium switch panel in front center of the range. This panel slopes slightly and is illuminated by a lumiline lamp concealed above it. Two outlets for electric appliances are included on the control panel.

A large warmer drawer is located between the two ovens and directly beneath the control panel. Across the bottom of the range are three storage compartments. Two of these are drawers which operate on rubber-tired, ball-bearing rollers. The third compartment is equipped with a drop door which opens and closes at a touch. This compartment contains economizer sheets for the Tripl-Ovens, broiler pans, and a special aluminum grill which fits over two surface units to provide an extra-large frying area.

### Walther Bros. to Distribute Bendix Laundry Line

NEW ORLEANS—Walther Bros. has added the new Bendix home laundry unit to its distribution line for this territory. W. J. Murphy, former Frigidaire salesman for Werlein's, has been named manager of the new washer department.

United Electric Service, Inc., Monroe, La., has been appointed Bendix home laundry distributor for 30 parishes in north and east Louisiana.

### Plan Book Is Issued By Cooking Council

NEW YORK CITY—The Commercial Electric Cooking Council has issued a plan book describing the cooperative program being sponsored by Edison Electric Institute and National Electrical Manufacturers Association to increase sales of commercial electric cooking equipment.

The market for electric counter cooking equipment, according to this plan book, is "as large as the American appetite." It includes church, school, and industrial cafeterias, hotels, restaurants, roadside stands, drug stores, lunch carts—in fact, practically any place where it is necessary to provide quantity cooking economically.

To utilities, the booklet states, this type of equipment offers a potential load-building value which compares favorably to that of the domestic electric range. There is a potential business of approximately 1 kw. of commercial electric counter cooking load for each family in every urban community. Approximate annual electricity used, per kilowatt connected, is 1,500 kwh. against approximate annual domestic range use of 1,350 kwh.

Pointing out to utilities the merits of commercial cooking equipment as a load factor, the plan book cites the following facts:

This type of equipment is used for many hours a day. In many instances the bulk of this consumption constitutes an off-peak load for the utility. The market is well concentrated in built-up sections, so consequently adequate service facilities and substation capacities are usually available. It represents a high potential load in a small area with relatively few customers to contact, and is therefore profitable to promote.

A survey of 48 representative electric utilities for 1936 showed an average estimated annual revenue per full-time commercial cooking salesman of \$10,400.

To dealers, the booklet stresses the fact that average annual purchases of electrical equipment by counter cooking establishments total less than \$200, while the potential annual market averages above \$730.

The plan book offers both utility and dealer a comprehensive program to assist them in organizing for this market. The support which manufacturers are giving to it, through sales assistance and training, direct mail, and national advertising, is described. The importance of cooperative effort between dealer and utility is stressed, and the need for active display and demonstration facilities available to salesmen of both utilities and dealers is emphasized.

Copies may be obtained from the Commercial Electric Cooking Council, 420 Lexington Ave., New York City.

### Crosley Introduces Line Of Five Battery Model Radios

CINCINNATI—Seven new models of battery radios, including two "Fiver" table sets, a "Fiver" console, a "Super Fiver," a "Super 5" console, a "Super 6" table set, and a "Super 6" console, have been announced by Crosley Radio Corp.

Two of the Fivers, the console model and one of the table sets, may be operated either on a 6-volt storage battery or 110-volt a. c. current. The table model is made of sliced walnut with grille bars, has a 6-inch speaker, stands 14½ inches high, is 10½ inches wide and 7½ inches deep. The console's top and front panel are of figured stump walnut, its speaker is 8 inches in diameter, and dimensions of the set are: height, 38 inches; width, 22½ inches; depth, 10½ inches.

The other Fiver table model is slightly smaller in all dimensions than its companion, and operates on a 2-volt air cell, a 2-volt storage battery, or a 3-volt dry A battery and three 45-volt B batteries. All three of the Fiver models are limited to standard broadcast reception.

The Super Fiver, a 5-tube superheterodyne set operating on the same batteries as the plug-in Fivers or with the Crosley model 117 power supply unit and a 6-volt storage battery, is designed for standard broadcast and for short wave broadcasts in the 5,800-15,400 kc. range. It is of the same height and depth as the larger Fiver table model, and is a half inch wider.

Similar in operation and chassis to the Super Fiver, the Super 5 console has an 8-inch speaker, is 38 inches high, 22½ inches wide, and 10½ inches deep.

The Super 6 table model receives American and foreign broadcasts, has three kilocycle bands, operates on a 6-volt storage battery or 110-volt a. c. current, and is slightly larger all around than the Super Fiver table set.

Chassis of the Super 6 console is identical with that of the table model. Cabinet dimensions are: height, 40 inches; width 24½ inches; depth, 13 inches. This set has a 10-inch speaker, operates on the same battery or current as the table model, and receives American and foreign, police, amateur, aviation, and marine broadcasts.

### G-E Fan Section Manager Dies after Long Illness

NEW HAVEN, Conn.—Richard J. Heaney, manager of the electric fan section of General Electric Co., died in the general hospital here Oct. 22 after a long illness.

Mr. Heaney had been with G-E for 42 years. As manager of the fan section, to which position he was appointed in 1921, he was elected chairman of the fan division of the National Electrical Manufacturers Association.

### 10 Division Managers Appointed by Bendix

SOUTH BEND, Ind.—Appointment of 10 division sales managers with headquarters in important cities throughout the country has been made by Bendix Home Appliances, Inc., to handle sales of the recently introduced Bendix home laundry.

Managers and their headquarters cities are: C. M. Sherwood, Boston; L. J. Chatten, New York City; H. A. Ellison, Pittsburgh; C. O. Nyquist, Atlanta; Les Carne, Dallas; William DeWitt, South Bend; W. C. Hutchings, Chicago; J. H. Knight, St. Louis; Otto C. Lang, Detroit; and Gerald Hulett, San Francisco.

Present Bendix production schedule calls for 350 units a day, and a yearly output of 150,000 machines. Assembly plant, at 1301 S. Walnut St., occupies a half million square feet, and twice that space is available for expansion. Business offices are at 610 Sherland building here.

Heading Bendix Home Appliances, Inc., is D. O. Scott as president; Judson C. Sayre and Otto C. Lang, vice presidents; Walter Bittner, treasurer; and George C. Fleener, secretary. Board of directors comprises Vincent Bendix as chairman, Mr. Scott, Mr. Sayre, Mr. Lang, Mr. Bittner, Mr. Fleener, and H. T. Ames. William H. Leininger is advertising and sales promotion manager. Brooke, Smith & French is advertising agency, and H. A. Bruno & Associates handles public relations.

### Johnson Will Direct G-E Appliance Advertising

BRIDGEPORT, Conn.—Roy Johnson, manager of the miscellaneous household appliance sales section of the General Electric appliance and merchandise department, has been named advertising manager for the entire household appliance sales division, according to an announcement by C. H. Lang, G-E advertising and publicity manager.

Mr. Johnson will supervise advertising and promotion for home laundry equipment, vacuum cleaners, heating devices, fans, electric clocks, G-E's floor polisher and electric blanket, and other miscellaneous household appliances, and also will continue his present managerial duties.

### Rates Lowered for Homes Using Several Appliances

BIRMINGHAM, Ala.—Reduction in certain residential electricity rates of Alabama Power Co. has been approved by Alabama Public Service Commission. Under the new rating system, every power company customer using electricity for any combination of cooking, refrigeration, and water heating will have a maximum base bill of \$8.

Estimated annual savings to approximately 1,600 consumers affected will total \$12,600.

**FREON is safe**

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**fittings**

Because they're wrought copper like the pipe they join, trust Arco Full Flow Fittings to carry Freon... Methyl... any refrigerant. Absolutely non-porous... safe against leaks... tight against vibration... Arco Copper-to-Copper makes a joint that's stronger than the pipe... that needs no tinning... that's easily made... that saves you money. Great variety of fittings from 1/4" to 4".

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division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION  
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**ARCO**

Full Flow **WROUGHT**  
COPPER FITTINGS & PIPE

Patent Nos. 2,025,973—2,005,969 and 2,002,470

## HUSSEY COPPER

**FOR ALL TYPES OF AIR  
CONDITIONING EQUIPMENT**

Modern air-conditioning installations demand the highest quality copper. That is why so many manufacturers prefer HUSSEY COPPER—a standard quality specification in every industry for more than 89 years.

HUSSEY COPPER Service is as near as your telephone—a nation-wide service backed by seven conveniently located Hussey Warehouses with complete stocks of copper products for air conditioning applications of every description including Housings, Air Washers, Blowers, Coils, Ducts, etc.

Write for the Hussey Catalog—check full of practical information on copper as applied to air-conditioning applications.

**C. G. HUSSEY & CO.**  
 A Division of Copper Range Co.  
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**PITTSBURGH, PA.**  
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**Representative  
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Products**

- SHEETS, STRIPS AND ROLLS
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- PREFABRICATED ROOFING MATERIALS OF ALL KINDS

**Copper HUSSEY Brass**



## DISTRIBUTOR-DEALER DOINGS

## South Jersey League Votes to Merge with Philadelphia Dealers

CAMDEN, N. J. — Electrical League of South Jersey, comprised of appliance dealers throughout the southern part of the state, at a recent meeting voted to affiliate with the Home Appliance Dealers Association of Philadelphia.

Three members of the League will be appointed to the board of directors of the Philadelphia association, and Howard Suckling, League secretary, will assist executives of the Philadelphia association in the organization of additional South Jersey dealers.

During the meeting, the Miller-Tydings act and the New Jersey fair trade law were discussed, and their legal aspects explained by Richard Shyrock, attorney. Homer Davis, president and B. H. Poucherm, executive secretary of the Philadelphia association, talked about the methods and experience of fair trade application in the Philadelphia area.

It was decided to request wholesale distributors and manufacturers whose merchandise is sold in southern New Jersey to submit fair trade agreements to the association for approval before final filing.

## 75,000 Attend Electric Show At Louisiana Fair

NEW ORLEANS—An estimated attendance of 75,000 persons proved the success of the recent "Electrical Show" of the South Louisiana State Fair. This was the second year that a cooperative electrical exhibition building featured the fair.

More than a dozen refrigerator, washer, and other electrical appliance distributors had displays, including Westinghouse, Crosley, Bendix, Delco, Kelvinator, General Electric, Frigidaire, RCA-Victor, Fairbanks-Morse, Norge, Sears-Roebuck, Philco, and Motorola. Show was under direction of A. O. Brock, rural electrification director for Louisiana Power & Light Co.

## Manchester Dealers Exhibit At Progress Exposition

MANCHESTER, N. H.—Manchester Progress Exhibition, held here Nov. 1-5, was participated in by the following electrical appliance dealers: Leavitt Co.; Manchester Hardware Co.; Marion Electric Co.; Modern Home Appliance Co.; J. J. Moreau & Son; New Hampshire Hardware and Plumbing Supply Co.; Public Service Co. of New Hampshire, and John B. Varick Co.

## Westinghouse Appoints 3 New Oklahoma Dealers

OKLAHOMA CITY—Appointment of three new Oklahoma City dealers has recently been made by Oklahoma Westinghouse Corp., Westinghouse distributor in this territory. The new dealerships are: Sneed Furniture Co., Spivey & McGill Furniture Co., and Moody's, Inc.

## Mississippi Furniture Store Adds Appliance Dept.

HATTIESBURG, Miss.—The Pioneer Furniture Co. has added a complete home appliance department to its store here under the management of V. L. Rogers. The firm will handle the complete Norge line, and General Electric ranges and water heaters.

## Hales-Mullaly Named Bendix Laundry Distributor

OKLAHOMA CITY—Hales-Mullaly, Inc., distributor of Electrolux gas refrigerators, Chambers gas ranges, and RCA Victor radios, has been appointed distributor in this territory for the Bendix home laundry, manufactured by Bendix Home Appliances, Inc., South Bend, Ind.

## Lewis Directs Appliance Sales for Texas Dealer

SAN ANTONIO, Tex.—Fred E. Lewis, who has been associated with refrigeration and household appliance sales since 1933, has been named manager of the radio and household appliance division of Karotkin Furniture Co., dealer in Kelvinator refrigerators and household appliances, Faultless washers, Zenith, RCA, G-E, and Westinghouse radio sets, and Universal, Sunbeam, G-E, and Marvin and Bowman small appliances.

Previous to coming to San Antonio, Lewis was connected with the Major Appliance Co., Omaha, Nebr. Before joining the Karotkin organization, he was with Joske Bros. Co., San Antonio, as appliance sales supervisor.

## Reader's, Crosley Distributor, Moves to New Quarters

HOUSTON, Tex.—Reader's, distributor of Crosley products, has moved into new quarters in the M-K-T Freight Station building, 1811 Ruiz here.

Included in the new location, which has a floor space of 15,000 sq. ft., are a large showroom, a well-equipped service department, and a warehouse.

## Kelvinator Adds Two Texas Dealers

SAN ANTONIO, Tex.—The Southern Equipment Co. of this city, Kelvinator distributor, has announced the appointment of the Alamo Piano Co. of San Antonio, and the Corpus Christi Air Conditioning Co., Corpus Christi, as Kelvinator dealers.

In addition to the refrigeration line, the Corpus Christi firm will also serve as dealer for Kelvinator gas and electric ranges, washers, and RCA radios. This firm is also representative for Airtemp conditioners.

## Fake Joins Promotion Staff Of Norge Distributor

SAN ANTONIO, Tex.—George Fake, associated with the retail selling of refrigeration and household appliances for the Karotkin Furniture Co. for the past 11 years, has joined the staff of Ellis Chaney Co., Norge distributor, as a member of the sales promotion department.

## Four Akron Dealers Exhibit At Grocery &amp; Meat Show

AKRON, Ohio—Four electric refrigeration dealers took part in the food show sponsored by the Akron Retail Grocers & Meat Dealers Association here Oct. 25-30. Attendance at the event approximated 300,000.

Norge refrigerators were displayed by the Dauntless Plumbing & Electric Co., Carmichael Radio Co., and Akron Home Appliance Co., while Westinghouse models were displayed by Ohio Electric Sales Co.

## Manchester League Holds Cooking School

MANCHESTER, N. H.—Manchester Electric Appliance League is sponsoring a nine-week series of electric cooking classes in the "Kurrent Kitchen" of Public Service Co. building here. Cooperating dealers are E. M. Chase Co.; A. L. Franks & Co.; Granite State Electric Supply Co.; Robert A. Horace; J. J. Moreau & Son; Public Service Co. of New Hampshire; G. F. St. Lawrence & Son, and John B. Varick Co.

## Itzkovitch Appliance Co. Opens Houma, La. Branch

HOUMA, La.—The Itzkovitch Appliance Co., General Electric dealer from New Orleans, opened a branch sales office here on Nov. 1. Marvin Pooley, former appliance dealer of Denver, Colo., is branch manager.

## G-E Salesman Makes 87 Sales In Six-Month Period

SHEBOYGAN, Wis.—Elmer Gritsmacher, manager of the refrigerator department of the Trilling Hardware Co., G-E dealership here, sold 87 units in the first six months.

## New Orleans Dealer Moves Into Larger Showroom

NEW ORLEANS—Southern Refrigeration Sales, Inc., has moved from 762 St. Charles St. to a larger and more convenient site at 4031 Canal St. The firm is a G-E dealer.

## Miami Dealers Protest New Finance Terms

MIAMI, Fla.—Potential sales of household refrigerators to the lower-income groups here have been affected greatly by the recent ruling of leading finance companies requiring a minimum down payment of 10% and a maximum carrying period of 30 months, according to a number of local dealers.

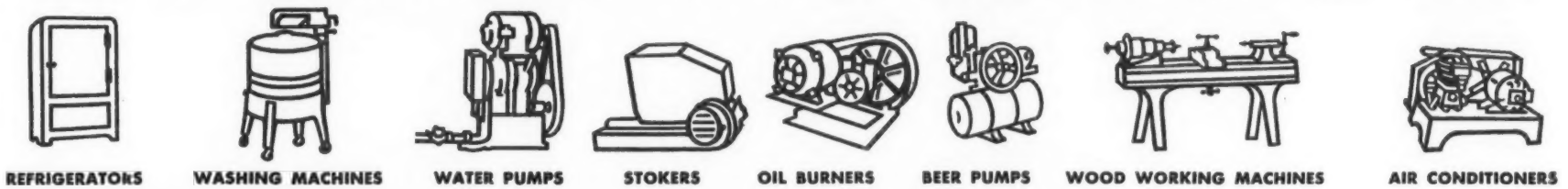
Two large department stores which finance their own credit sales are drawing customers away from the small dealers because they are able to arrange their own terms to suit the buyers, the dealers say.

Dealers complain that the new finance ruling, which has been in effect a little more than two months, was made without advance notice, catching them unprepared to adapt their sales policies to the new conditions. Commitments made for fall deliveries, they say, have already been arranged on the old terms, and now these commitments cannot be fulfilled unless the dealers themselves are able to finance them.

## Throckmorton Made RCA President

CAMDEN, N. J.—G. K. Throckmorton has been appointed president of RCA Mfg. Co. here, according to an announcement made recently by David Sarnoff, president of the Radio Corp. of America. Mr. Throckmorton was executive vice president of the company, and, since the retirement of E. T. Cunningham as president, had been acting head of the firm.

## OVER 200 DIFFERENT SIZES — FOR EVERY STANDARD MAKE AND MODEL



**YOUR BEST BET IN V BELTS**

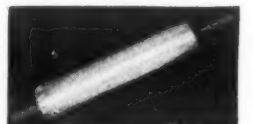
FOR BEST PERFORMANCE ON LARGE AIR CONDITIONING UNITS SELL **GOOD YEAR E-C CORD MULTI-V BELTS** made in matched sets—uniform length accurate cross-section

THE GREATEST NAME IN RUBBER **GOOD YEAR** FRACTIONAL HORSEPOWER ENDLESS CORD V BELTS

**SEVEREST** service tests prove that Goodyear Fractional Horsepower V Belts last up to twice as long as other kinds—with practically no slip or stretch—due to their endless cord construction. That is why they are your best bet—because they insure lasting satisfaction—build good will for you with every customer! Remember, Goodyear is the world's largest manufacturer of quality rubber belting—and it always pays to sell the best. Goodyear V Belts are made in correct sizes for all standard models of air conditioning units, refrigerators and other belt-driven appliances. Handsome metal display rack and Handy Application Guide furnished with our three standard assortments. To get a bigger share of this fast-growing business, phone your jobber—or write Goodyear, Akron, Ohio, or Los Angeles, California.

## NOW—MAKE REAL MONEY ON WASHING MACHINE WRINGER ROLLS

Goodyear Universal Washing Machine Wringer Rolls eliminate carrying a large stock of made-up rolls, increase turnover and profit. Made in six standard diameters with extra rubber and shaft length that can be quickly cut to fit any wringer with Goodyear Combination Milling Machine. Write for data.





## Tyler Fixture Co. Executives Prepare for Distributors Convention



(1 and 2) Sam Vander Weg, promotion manager of Tyler Fixture Co., goes to work with compass and ruler. (3) Busy draftsmen in Tyler's store planning department. (4) Jerry Tyler, president of the company, finds his job as replete with details as do his subordinates.

### COMMERCIAL REFRIGERATION

#### Packaged Unit Enables G-E Distributor To Build Wholesale Volume Up To \$15,000 Monthly Average

CLEVELAND—Commercial refrigeration packaged products sales plan of the Cleveland branch of General Electric Supply Corp., which has been in effect here for six months, has enabled 65 local dealers to make substantial profits, claims Charles M. Rowland, manager of the commercial division of the distributorship.

Average monthly wholesale sales by the supply company have increased from \$1,000 to \$15,000, Mr. Rowland said. He expressed confidence that next year the number of dealers supplied by his firm will reach 140.

First step in the formation of the sales plan was the construction of a self-contained commercial sales catalog containing specification sheets and mimeographed price lists, and practically all the information needed by salesmen to sell self-contained commercial equipment.

Second step was the distribution of the catalogs. Regional sales meetings were held throughout the distributorship's territory, each session being held at night and having a limited attendance of 25 persons, including dealers and salesmen.

The catalog was explained in detail at these meetings, and copies were given to each person present.

Examples of the results obtained by dealers using the catalogs are given by Mr. Rowland as follows:

Mack's Jewelry Co., Akron—two milk coolers; Hisrich's Wallpaper & Paint Co., Dover Ohio—\$2,263.50 worth of commercial equipment; Mitchell Hardware Co., Ashtabula, Ohio—\$8,096.10 worth; Standard Store Fixture Co., Cleveland—\$6,720.36 worth since June; Monarch Store Equipment Co., Cleveland—\$17,767.99 worth since March.

#### G-E Beverage Cooler Used To Cool Photographic Bath for Plates

DELAWARE, Ohio—Used as a constant temperature bath for developing photographic plates, a General Electric beverage cooler has been installed in the Perkins observatory at Ohio Wesleyan university here by Bard, Inc., Columbus distributor.

#### Cruse Builds Case for Use in Self-Serve Markets

LOUISVILLE, Ky.—Cruse Refrigerator Co.'s recently introduced Serv-Yur-Self dairy and delicatessen case is finding a market in many chain grocery and meat organizations, reports W. C. Cruse, Jr., president.

A companion to the company's Vegetaria case, the Serv-Yur-Self case is of the open-top type, and is designed especially for use in stores of the self-service style, where customers select the items for themselves before taking them to a clerk for checking and payment.

Available in lengths of 8, 10, and 12 ft., the case may either be placed against a wall or backed up with another case of the same type to form a center-store "island display."

Front, top, ends, and continuous lighting reflector of the case are of white porcelain trimmed in black porcelain. Interior, including the middle display shelf, is of white porcelain. Bottom storage compartment, enclosed by glass doors for storage of milk, etc., is of copper alloy steel in aluminum bakelite finish.

In the wall-type case, heavy-duty coils are used in the extreme top of the case and in the bottom storage compartment. In the "island" type case, one coil is at the extreme top, with two coils in the storage compartments, one on each side.

The case is insulated with 2 in. of corkboard, and is 55 in. high and 34 in. wide. Bottom display shelves in the upper compartment are 17 in. wide, in the "island" type box, and 23 in. in the wall-type unit. Top display shelves in both cases are 6 in. wide.

#### Lewis Joins Engineering Staff of Lipman

BELOIT, Wis.—Evan Lewis, formerly in charge of engineering for the Cleveland branch office of General Refrigeration Sales Co., distributor of Lipman and GR refrigerating equipment, has joined the factory engineering staff of General Refrigeration Co. at headquarters here.

#### Milk Coolers Used for Storage Of Clam Bake Supplies

SCHENECTADY—A General Electric refrigerated milk cooler is used to store clams, melons, and other clam-bake necessities by R. Putman, proprietor of Putman's Inn on Saratoga-Glens Falls road near here.

After trying various methods of keeping his very perishable goods in safe, cold storage, Mr. Putman hit upon the idea of using the milk cooler when he saw such a unit in use on a friend's farm.

With the clam-bake season over, Mr. Putman has leased the milk cooler to a farmer until next summer.

#### Searle Elected to Board Of Worthington

HARRISON, N. J.—F. Gladden Searle, of Bronxville, N. Y., has been elected a member of the board of directors of Worthington Pump & Machinery Co.

Mr. Searle, longtime employee of Continental Can Co., still serves as vice president in charge of sales and advertising for that company, and also is a director of Vincennes Packing Corp., Vincennes, Ind.

#### Spine-Surface Coil Which Increases Heat Transfer Exhibited by Peerless

CHICAGO—A material increase in the rate of heat transfer from air to the refrigerant is claimed of the new spine-shaped fin coil, displayed for the first time by Peerless of America, Inc., at the Refrigeration Service Engineers Society exhibit last week at Stevens hotel here.

The surface of the new coil resembles a hair brush in appearance, with a multiplicity of spines protruding from the tube proper.

Principle involved in the new coil was evolved from experiments at the University of Michigan which demonstrated that very rapid heat transfer was obtained at sharp corners, and that the more sharp corners and surfaces that were provided the more rapid was the heat transfer.

To apply this theory to fin coils, a standard fin coil was tested under a given set of conditions. A coil of

the same size, capacity, etc., with the fins shredded by a special machine resulting in less surface, but an increased number of sharp surfaces was tested under the same set of conditions. The increase in capacity brought about by the increased number of sharp surfaces was 51%.

Following this and other fact-finding tests, a machine was developed for raising the sliver-like spines from, and perpendicular to, the tube wall. The machine will produce a wide variety of spines per square inch of tube surface, at several heights, and at a variety of cross sectional areas, from copper, steel, brass, and aluminum, according to A. F. Hoese, Peerless engineer.

The new surface is to be used for air conditioning at present, pending further research on its application to commercial refrigeration.

#### New Spine Coil Captures Attention at Show



In the display case in the center of the exhibit by Peerless of America at the Chicago conventions last week was the company's new "spine-shaped" fin coil, most talked-of product exhibited at the show.

#### This Simple patent is the secret that has made a SILENT V-BELT . . . and here's the reason



When a straight-sided V-belt bends around its pulley there is tension on the top of the belt and compression on the bottom. This makes the side walls bulge outward—as shown in figure 1, below.

The Gates Belt is built with a patented concave side. The bulge, due to bending, simply straightens the concave side to a precise fit with the sheave groove as shown in figure 2.

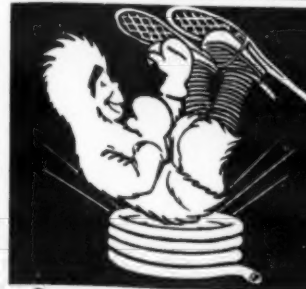
This exact fit naturally prevents slipping. No slipping means a SILENT belt, a belt that wears longer, a belt that does not heat and therefore does not stretch.

#### BELT GUIDE — FREE

The Gates Belt Guide is the recognized national authority on correct belt fit for ALL Refrigerators, Washing Machines, Pumps, Stokers, etc., etc. FREE from your Jobber or the GATES RUBBER CO., Denver, Colorado.

Write Today!

## GATES BELTS



Anaconda Copper REFRIGERATION TUBES Unusually Soft!

THE AMERICAN BRASS CO. FRENCH SMALL TUBE Branch General Offices: Waterbury, Conn.

FRESH—FROM THE ICE



Automatic refrigeration . . . preserving ripeness and flavor . . . insuring freshness . . . providing ice cubes for all occasions . . . making life more pleasant in every way.

EXTRA DRY ESOTOO contributes largely to the success of automatic refrigeration the world over, for its absolute purity and freedom from moisture make it the recognized refrigerant choice of engineers and service men. Its wide use has resulted in the location of so many distributing points that it is now promptly available in every part of the world.

## EXTRA DRY ESOTOO

PRODUCT OF VIRGINIA SMELTING CO. WEST NORFOLK, VA.



## Department Store Executives Tell How They Handle Refrigerator Trade-In Problem At G-E Merchandising Clinic

(Concluded from Page 1, Column 2) the supply, and that the repair and marketing of trade-ins can be made a profitable business.

In any event, trade-ins do not now constitute a sufficiently large proportion of the total business to be a serious problem, according to the delegates to the clinic.

Average stores take in used models on between 5 and 6% of their sales. Highest percentage reported was 10, and this was in the case of a few stores which had sold large numbers of cut-price makes of doubtful reputation a few years back—refrigerators which are now coming home to roost.

### TRADE-IN AS SALES HELP

Henry Goldsmith of Mandel Bros., Chicago, stated that his firm uses trade-in allowances as a "sales help" rather than a hindrance.

"We never quote an allowance on an old box without seeing it," he declared. "Thus we are able to get into the prospect's home to close the sale. A customer may walk out of your store but she isn't likely to kick you out of her home. Moreover, stipulated allowances which are increased on higher priced boxes look simply like cut prices to the customer—which they are."

Most trade-in boxes which Mandel's acquires are turned over to second-hand dealers, at an average price of \$10 per box. Refrigerators in first-class condition, or of large size, find a ready market among the store's employees.

### DEMAND FOR USED UNITS

The Allied Stores group reported that the demand for their rebuilt trade-in refrigerators had become so great that they had been forced to purchase several carloads of used units this season. After reconditioning, these were offered for sale with guarantees ranging from 90 days to a year. Representatives of this group claim that they are able to sell used boxes easily because of the reputation of their service departments.

Other department store men reported that they sold reconditioned trade-ins in their bargain basements, from warehouses, or on the floor of their regular appliance departments. Ames & Brown of Norfolk, Va., rented an old store in a poor section of town early this year, and put in a stock of used refrigerators which they priced between \$75 and \$100. Out of 360 sold so far, losses were registered on but two.

These boxes had been purchased on trade-in allowances of \$35 to \$45. On each \$15 was charged to the insurance fund, which took care of the one-year guarantees.

A Chicago store auctions off trade-in appliances to its employees once a month, a business which it has found highly profitable.

### BLUE BOOK UNLAWFUL

Irving Fox, counsel for the National Retail Dry Goods Association, scotched hopes of a blue book for trade-in allowances control, by saying that when the Supreme Court declared the N.R.A. unconstitutional, such agreements were made unlawful. Trade associations, he declared, will be carefully watched to see that they maintain no horizontal price maintenance agreements. No association, he said, had the right to fix prices or agree on allowances.

A list of suggested prices is legal, and market quotations may be permissible, but no agreement may be entered into between groups of

manufacturers, distributors, or dealers to maintain these prices or allowances among themselves.

In regard to the Miller-Tydings Act, Attorney Fox maintained that it was likely to be as unsatisfactory to its sponsors as was the Robinson-Patman bill.

So far, he said, price agreements have been entered into only on the so-called drugstore items. The stipulation against horizontal agreements has thus far prevented action being taken by appliance merchandising groups, notably the radio wholesalers, who very much favor such action.

### PRICE CONTROL LAWS

Mr. Fox warned the delegates that attempts to control prices through legislation invariably cause headaches to both proponents and opponents of such control. They never work out, he insisted, in the manner that the sponsors hope.

"If manufacturers and retailers are going to continue to appeal to the government for laws to help them out of difficulties," he averred, "they are soon going to be in an awful mess."

"Not only will they not like the laws that are framed, but they will have to submit to more and more legislation, once the vicious cycle is started, that will wind up in a maze of regulatory legislation which can only serve to make business so complicated that possible profits will be endangered."

In Mr. Fox's opinion, the manufacturer and wholesaler—who have the right to choose their own customers—should do the policing themselves by refusing to sell to dealers who will not operate in a sane and sound manner.

### VALUE OF DISPLAYS

W. L. Stensgaard, president, W. L. Stensgaard & Associates, Inc., told the delegates that poor display is a most expensive economy for department stores.

"We have heard (and have seen from the Controllers' Congress 1936 report—N.R.D.G.A.) that the mechanical refrigeration department is the sickest in the typical department store—chained to every known retail operating malady."

"We have also heard that markup decreases as volume increases and markdowns increase as volume increases—and that consequently, losses will steadily grow higher. We ask why?"

"We have even heard that stores would be better off if they discontinued their refrigerator departments. Quoting from the 1937 Retail Furniture Business Review:

"The time has come when retailers would better their situation by limiting the volume of refrigerator and appliance sales."

"The extent of competition in these items has become too great

and the markup is forced to unprofitable levels so that to over-extend is only to court trouble."

"It seems that retailers have attempted cures using every remedy known to retailing science—but have they? We think not. Here is why:

"Too many refrigerator departments look like a tombstone show-room."

"We believe in a plan that will dramatize and attract staple business at regular markup—and that such a plan can be visualized—one that will increase volume and not in any sense decrease markup and increase markdowns."

"We are bold enough to claim that a greater part of the merchandising ills in this department is attributable to inertia, lack of analysis, lack of action—on the part of both retailer and manufacturer."

### EFFECT OF DRAMATIZING

"We know that stores have utilized every means of promoting this department, excepting one. And that is, dramatizing and making more attention-compelling and productive, the square foot area of the mechanical refrigeration department."

"Thousands of dollars are spent by both retailer and manufacturer in promoting (especially through space advertising) this department—spending little or nothing to 'pipe in' the force of this local and national advertising."

"Little or no effort is made to obtain a higher yield in annual dollar sales from each square foot of selling space in the department."

"The 1936 sales per square foot in this volume group (5 to 10 million) amounted to \$58.00. In other words, there were sold during the

year about one and two thirds refrigerators in the area needed to exhibit one refrigerator."

"Every one must agree that this is pathetically low. This figure can be increased—no one can doubt it."

"If we say this department contributed \$82,500 annual sales (1.1% of \$7,500,000) then the average square foot area of the department is about 1,420 (\$82,500 divided by \$58.00).

"Here we have 1,420 square feet of selling space which, if made dramatic and replete with practical, colorful selling appeal, can yield a much higher dollar sales return per year—and at a nominal investment."

"In this volume group, we believe it can be done with a functional plan that should cost no more than \$350 and \$50 every three months to keep the department alive with new selling features—say, a total investment of \$500 for a year. We believe it can be done in most any sizeable department at a bargain cost per square foot of less than 40 cents."

### OTHER CLINIC SPEAKERS

Among the other speakers at the clinic were A. M. Sweeney, G-E refrigeration department manager; Ralph Cordner, assistant general manager of the appliance and merchandising division of General Electric Co.; Carl Snyder, manager of G-E appliance sales; Ted Quinn, president of Maxon, Inc.; Dr. Donald Laird of Colgate university; H. O. Hope of H. & S. Pogue, Cincinnati; James Ginsburg of Abraham & Straus; and M. Webb of Strawbridge & Clothier, Philadelphia. F. C. Strodel, executive vice president of L. Bamberger & Co., was an able chairman.

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Run smoothly . . . without noise . . . and last longer; repeated tests prove this.

The highly satisfactory service and life of these belts is due to the exclusive Manhattan construction: the endless Whipcord is completely floated in rubber, welded securely into a strong tension member which is placed in the neutral axis area. Above this an extensible section and below, a compression section. Result: internal heat reduced to a minimum.



## Supply Jobbers Group Is Facing New Problems as Regards Membership Qualifications

By H. W. Small, Thermal Co., Inc., St. Paul, Minn.

I HAVE been asked to discuss with you the subject of "Membership Qualifications—Are We Headed In the Right Direction?" Purpose of this discussion is to clarify in your minds our present requirements, to explain the history and the purpose of these requirements and to present the problems arising from different interpretations of these requirements.

The history of our organization is fresh in the minds of many. To recent members a review is necessary if they are to understand and aid in the solution of our present problems. Before we can intelligently consider any of these points, we must understand something of ourselves and of our position in an industry that was established before we entered it, and of which we are an important part, though small in relative business volume.

The bulk of the ice machines have been made by a small number of manufacturers. The remainder by a relatively large number, many of whom are no longer in business. The large manufacturer sold to

the correct price. New sources were sought and found through local distributors who were willing to sell direct and manufacturers of allied products who jobbed expansion valves or similar items.

As the distributor's sales increased, he wanted to purchase additional lines and resell them at the market trade price. Many manufacturers welcomed this increase in their sales. When the supply jobbers aggressively entered the field, hundreds of outlets were buying one or more supply lines for the trade.

It was generally agreed that the

### A Picture of the Parts Wholesaler and His Problems

The refrigeration supply jobbers—who are they, what is their business, what does their association mean, what are some of the problems facing them today?

For those who are interested in this relatively new but potent distributing group in the refrigeration and air-conditioning field, some pretty good answers to these questions are supplied in the talk given by H. W. Small of the Thermal Co., Inc., St. Paul parts jobbing firm, before the recent annual conventions of both the National Refrigeration Supply Jobbers Association and the Refrigeration Supplies and Parts Manufacturers Association.

dealers, direct to the consumer, through branches or through distributors. Replacement parts, tubing, fittings, and other items required to complete an installation were sold through these channels. Service and installation were handled in the same way.

As dealers changed from one line of machines to another, they often continued to service the makes they previously sold. Their service men left to establish independent shops. At times it was difficult to secure the replacement parts and supplies needed. Certainly it was difficult to obtain them at what might be called

continuation and expansion of this trend would lead to no one's eventual profit. Many recognized the possibilities of developing a larger market through local sales outlets and were ready to welcome a dignified means to this end.

It was at this time that F. M. Cockrell of REFRIGERATION NEWS issued an open invitation to all who might be interested in this phase of the industry, to attend a meeting at Detroit. The outcome of the meeting was the formation of two organizations—the manufacturers group and the jobbers group.

A relatively small number of

## Jobbers of Refrigeration Supplies—Experienced, Hardworking Businessmen



Irving Alter of the Harry Alter Co., Chicago, and a director of the National Refrigeration Supply Jobbers Association, took these pictures of his fellow members. The first four were taken at a luncheon, while the last two were taken in a directors' meeting, and affords an idea of the seriousness with which the jobbers take their association's affairs. (1) H. W. Blythe, H. W. Blythe & Co., Chicago; and R. L. Vincent, Vincent Brass & Copper Co., Minneapolis, give

close attention to an across-the-table conversationalist. (2) Genial H. S. McCloud, Williams & Co., Pittsburgh, passes on a good story to Joe Oberer of J. M. Oberer, Inc., Detroit. (3) R. M. McClure of the firm of Ortman, McClure and Hadden, association management engineers, is hard at work on his "vittles," while Clarence F. (Sandy) Pratt of the California Refrigerator Co., San Francisco, looks serious. (4) Engrossed in deep thought is Henry W. Merkel of the Merkel

Bros. Co., Cincinnati, while Arnold Dessau of Melchior, Armstrong, Dessau Co. awaits an answer to his question. (5) F. H. Langsenkamp, Jr., of the F. H. Langsenkamp Co., Indianapolis, and Arnold Dessau are paying close attention to business in the directors' meeting. (6) Directors D. C. Lingo of the D. C. Lingo Co., Houston, Texas, and L. H. Gorton of Machine Tool & Supply Co., Tulsa, Okla.

either group was present. There were, however, a sufficient number to obtain all possible views and opinions. In fact, I do not recall any two individuals whose opinions coincided.

Speaking of ourselves (jobbers) we divided on most points into two rather equal groups. One group contained those whose interests were primarily wholesaling supplies. In the other group were found those whose interests were divided between wholesaling and some other type of effort connected with the industry. As their interests varied, so varied their views on all controversial matters.

It soon became apparent that to take an arbitrary or unbending stand on any issue meant the failure of the meeting. We could not write one half of the jobbing industry out of the picture and hope for the co-operation of the manufacturers. Their only reason for meeting with and working with us was to find a means for increased sales and better distribution.

It should be kept in mind that these means had to be fundamentally fair, permanent, profitable, and acceptable to the large majority of those interested. Moreover, it had to follow the then recognized practice of the industry as a whole.

No problem could be solved until we had someone to solve it. In other words—Who was a jobber, and how could a jobber be identified? There has been no really perfect answer to this question and there never will be. No set of rules can be laid down which will not permit of some misinterpretation.

### MEMBERSHIP REQUIREMENTS

The original membership requirements were altered at the Memphis convention. I will read them as they now stand on the record:

"Membership in the association shall be limited to persons, firms, or corporations actively engaged in the wholesaling of refrigeration parts and supplies and performing the following functions:

"1. Purchase at wholesale prices at least 75% of the following classes of products:

"Copper tubing—hard and soft. Refrigeration valves and fittings. Accessories. Refrigerants and lubricants. Belts and pulleys. Expansion valves. Controls. Gaskets. Tools. Gauges and thermometers. Filters and dehydrators. Evaporators and condensers.

"2. Maintain and warehouse a stock of such products to supply adequately the requirements of the trade.

"3. Distribute to the trade only, a catalog either of his own or an aggregation of his manufacturers' catalogs. In the case of a catalog of his own, the manufacturer is to have the privilege of editing those pages or parts of pages covering his particular products.

"4. Membership in this association

is an entirely voluntary matter and the board of directors reserves the right to approve or reject applications for membership."

In the last analysis this is just another way of saying that a refrigeration jobber is one who is investing wholeheartedly of his time and money in the purchase and resale of items commonly used in the refrigeration trade.

To unselfish and unbiased men, nothing need be added to the above. But as we need thousands of laws to interpret the 11 words of the Golden Rule—so do we need a more specific gauge by which to measure the qualifications of a jobber.

It is not my intention to suggest any specific clarification or addition to the present membership qualifications. That will be for you to do before the close of this convention. I am going to point out some of the weaknesses and dangers that lie in the interpretations of our present requirements.

### ACTIVITIES OF MEMBERS

You will all have to agree that since the beginning of this organization either our qualifications have been too restrictive or our interpretation too lenient. Take a look at our membership list. You will find that in addition to the jobbing of refrigeration supplies our members are active as:

Ice machine distributors  
Refrigerator distributors  
Service organizations  
Manufacturers  
Manufacturers' agents, etc.

If we are to make and hold a place for ourselves in the industry, we must merit its respect.

At an early meeting I can remember that the sale of an ice machine, particularly a large one, was sufficient to disqualify a prospective member. If the prospective jobber has a franchise with some ice machine manufacturer I believe it would still be considered as sufficient grounds for holding up the application.

Recently the representative of an ice machine manufacturer told me that they had just appointed an ice machine distributor as a jobber of their parts line. I questioned the wisdom of this because of the precedent.

I was then asked a question which gave me food for thought: "Why do you disapprove of an ice machine distributor jobbing supplies, when supply jobbers are distributing ice

machines?" Gentlemen—I'll bite! Why do we?

The time has come for us to take a definite track. When that main track has been selected, neither compromise nor expediency should permit the opening of the switch. We should use great care in charting our future course, keeping in mind the harmony that is essential between ourselves and the other branches of the industry. When the other groups have indicated their approval of our course, we should ask and expect to receive their full cooperation.

Should individuals decline proper cooperation, it should be the duty of each one of us to impress upon such individuals the necessity of cooperation so long as they are members of the group.

Since the beginning of our organization we have had the pleasure and benefit of the close cooperation of the manufacturers association. This was made possible because their definition of a jobber conformed to ours in every respect. Any alteration of the present qualification requirement should be made with that in mind.

Perhaps some of you are wondering why I seem to attach so much importance to the subject. The simple answer is that in my opinion, the future of our business lies in keeping the jobbing of refrigeration supplies in the hands of the refrigeration jobber. To accomplish this we must be an association of jobbers rather than an association to prevent jobbers.

### QUESTIONS TO ANSWER

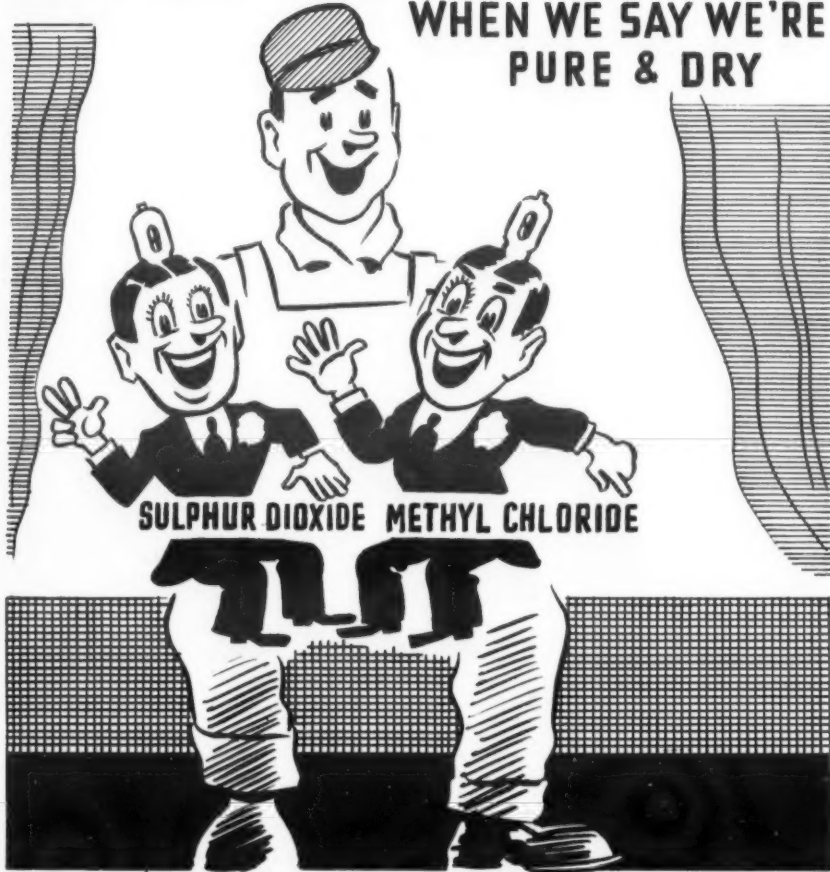
At least two questions should be answered definitely by this convention:

1. Should a jobber sell high sides? This is another way of asking "Shall an ice machine distributor be admitted to membership in our association?" You can not possibly say yes to one and no to its counterpart.

2. Shall firms be denied membership when their executives or partners have a financial interest directly or indirectly in another firm engaging in service or installation operations?

My purpose is not to defend or oppose either proposition at this time. I do say, however, that we should take a definite stand on these two issues after hearing, with an open mind, both sides of these most important questions. Our future place in this industry will be affected by our decisions.

## WE'RE NO DUMMIES WHEN WE SAY WE'RE PURE & DRY



**ANSUL CHEMICAL COMPANY**  
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**Anaconda Copper**

**REFRIGERATION TUBES**  
They Flare without cracking

**THE AMERICAN BRASS CO.**

FRENCH SMALL TUBE Branch  
General Offices: Waterbury, Conn.





## PROFITABLE SALES IDEAS

### G-E Dealer Builds Profit by Selling 'Home Conditioning' Instead of Gadgets

SPRINGFIELD, Mass. — Selling "home conditioning" instead of electrical gadgets has increased business annually for Bailey-Wagner, Inc., General Electric dealership here, says Albert Bailey, treasurer.

"By selling 'home conditioning'—that is, everything that can be put into the home to make it a more pleasant place in which to live and work—you lay the foundation for repeat business," Mr. Bailey says.

"We have divided our sales force so that seven men, each an expert in a different line, supervises that line. One man is experienced in selling and installing kitchens. He sells other equipment also, but when another salesman digs up a prospect for an electric kitchen and the layout presents difficulties, we call on our kitchen expert.

#### SELL HOME COMFORT

"He doesn't replace the salesman, but helps him in planning the kitchen and placing equipment. In this way we sell the customer home comfort," Mr. Bailey says, "and we are reasonably sure that the sale will be satisfactory."

The firm has men who are expert in selling heating and home air conditioning, industrial air conditioning, lighting, radios, refrigerators, and laundry equipment. Each man is responsible for a set volume on his own and other lines.

"The head man must be getting ideas for all the salesmen to use for his line, constantly," Mr. Bailey says. "By having all the men sell all products, we eliminate seasonal jobs. We want men who are stable, not floaters. When we have a good man we pay him what he is worth, because if we don't, we know someone else will and he'll be taking business out of the front door."

#### 14 SALESMEN EMPLOYED

The company now employs 14 regular salesmen, and plans to add 12 more in January, Mr. Bailey says.

"We have 16 others employed here who are not salesmen in the strictest sense of the word, but they must produce to stay with us. We impress on the minds of our force that it's the business that comes in which pays their salaries.

"Our service department of seven men is another aid to our sales department. We have taken over all G-E servicing in the city. An efficient service department builds good will.

"Too many service men tell the owner that it won't do any good to repair an appliance, that they had better come down to the store and buy a new one. We send our service men in to fix the appliance.

#### BENEFITS FROM SERVICE

"When the customer finds that we've fixed the appliance that others said couldn't be repaired, she remembers us when she wants to buy something and tells her friends and neighbors about us.

"Some concerns brag that their service departments netted \$1,000 last year. If they did, they probably lost \$10,000 in sales—because they charged too high prices. The job should be done as cheaply and as well as possible."

For leads received from old customers, Bailey-Wagner pays the customer with an electrical appliance instead of cash. Reasons for this, Mr. Bailey says, are that if you give the housewife \$10, she sticks it in the family budget and forgets, but give her an appliance and she appreciates the luxury it affords her.

"Every time she uses it she thinks: this is the present that the Bailey-Wagner men gave us. By using our discounts, we can give an appliance that costs us \$10 but is worth more."

Both Mr. Bailey and Gene Wagner, his partner, came to Springfield from Hartford, Conn., four and a half years ago to open their own business. Outgrowing the first headquarters, the company in January, 1937, opened a new modern air-conditioned store.

Modernistic black glass with chromium trim forms the store exterior. Inside is a modernistic salesroom with an all-electric kitchen in one corner.

#### IMPORTANT DEPARTMENTS

Two departments Mr. Bailey considers most important in the organization. One is the promotional department, which sends out direct-mail advertising copy each month. (This is followed by salesmen's calls.) Bailey-Wagner also places advertising with local radio stations.

The demonstration kitchen is important part of the promotional department. Every Tuesday night, each salesman is allowed to invite a number of guest-prospects for supper at the store.

First the suppers were open to the public. When this stunt did not work well, Mr. Bailey limited the number of guests. He started with 15, and the salesmen have been competing to bring extra guests so that the number is constantly increasing. Number of weekly guests now averages 50.

Mr. Bailey also considers important the used appliance department, where trade-ins are sold.

#### WATCH ALLOWANCES

"We have to be as careful about allowances as used car dealers. We may soon find ourselves making five different transactions to complete one deal, just as the used car man now does," he declares.

Appliances taken in are checked, put in good condition, cleaned and polished, and priced "right." We then merchandise them and stand back of each sale, just as though it were a new article. The used appliance department may take lots of studying to adjust correctly—but we are studying the situation all the time."

### Kelvinator Forecasts 650,000 Replacement Sales for 1938

DETROIT — More than 560,000 families throughout the United States who replaced ice boxes with electric refrigerators 10 years ago are planning to buy new refrigerators during the coming year, states Marvin S. Bandoli, refrigeration sales manager for Kelvinator division, Nash-Kelvinator Corp.

"The sales potential for next year," he said, "is estimated at 2,500,000 refrigerators—1,000,000 to be installed in new homes, 850,000 to be installed in homes as yet unsold or unfinished, and 650,000 to be replacements.

"Similar to the automobile business, refrigerator replacements will exceed new installations in the not too distant future. Saturation, however, continues to be a false alarm, as the rapid annual growth of refrigerator sales gainsays."

### 'Using the User' Makes Most Sales for Indianapolis Dealer

INDIANAPOLIS—To D. J. Massa, local General Electric dealer, "using the user" is more than a slogan—it is an active principle of operation.

It is largely through use of this type of salesmanship that Mr. Massa's five-man crew has sold 180 refrigerators, 30 ranges, 30 pieces of laundry equipment, three electric sinks, several water heaters, and a considerable amount of commercial equipment so far this year.

Several users have been able to pay for their equipment through bonuses which the Massa organization gives users who turn in names of worthwhile prospects.

By retaining his full sales staff, even during dull periods, Mr. Massa assures himself of a steady, dependable crew, instead of a bunch of unsatisfied drifters, he says.

### Old Prospect Files Are Valuable for Sales Leads to Dealers

PALMERTON, Pa.—Old prospect files have been used to good advantage by the Stemler Co. in boosting this company's current refrigerator sales, according to L. A. Stemler, owner of the firm.

The company first checks over its old prospect lists, noting the reason why each prospective customer did not buy. In the case of many prospects during the last few years, the sale was lost because of the financial and psychological effects of the depression. In such cases the present financial status of these prospects is thoroughly investigated to ascertain whether or not such prospects warrant further contacts.

"As a result of improved business and financial conditions," Mr. Stemler explains, "people who a few years ago were financially unable to buy, or who hesitated because of the prevailing uncertainty of business conditions, now are able and willing to purchase electric refrigerators. Quite a few of these prospects already have been thoroughly sold on the value of electric refrigeration."

### Westinghouse Ranges Used in New South Africa Apartments

JOHANNESBURG, Union of South Africa—Westinghouse electric ranges have been installed in every kitchen of two new, modernistic apartment buildings here.

### Radio Spots Bring Returns in Sales To Texas Dealers

FORT WORTH, Tex.—An intensive campaign of radio spot announcements broadcast from Feb. 11 to Aug. 1 prompted a substantial increase in refrigerator sales both for retail outlets of the T. C. Jones Co., Grunow distributor, and the dealers it serves, according to Owner T. C. Jones.

Eleven announcements, each 200 words long, were broadcast over a local broadcasting station seven days a week.

"By extending the program far into the season, we publicized a refrigerator sales message to such an extent that dealers all over the northern part of Texas, our trade territory, were reached. Retail sales benefited directly from the promotion."

"At the end of each commercial announcement, we featured the name of some dealer in our territory. This meant that 11 dealers out of the 149 which we serve were given promotional assistance each day," Mr. Jones declared.

Advertising features were exploited in the brief radio announcements, according to Mr. Jones. Beginning with a bugle call—which became a familiar key to radio listeners—programs played up outstanding refrigerator selling features.

The entire campaign was financed by the distributorship.

"We have been using the refrigerator food demonstration very effectively this year," Mr. Jones re-

ported. "We keep a model on our display room floor stacked with such foods as butter, cheese, milk, bananas, melons—many of them are kept in the box for several weeks."

"We stressed this odorless food demonstration, together with others, in the radio announcements," he declared. Dramatizing one of the salient sales points of the refrigerator, Mr. Jones believes, gave the programs an added pull not attained with the ordinary type announcement.

Closing lines in the program were the song "You Know Grunow." Street tests have proven that people in the distributor's trade territory are familiar with the key song, which the programs helped to popularize, Mr. Jones reports.

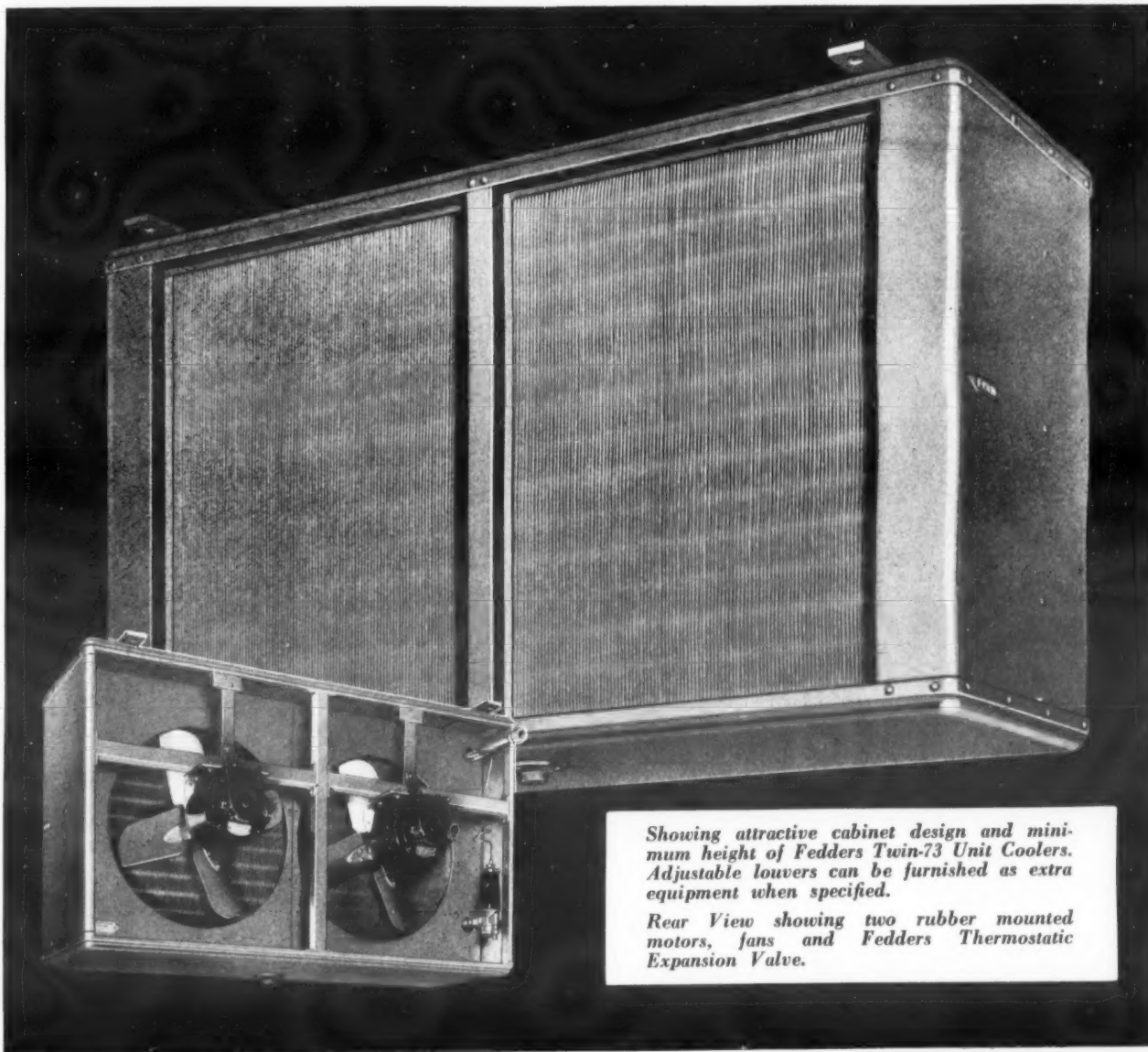
### Borrowed Pen Aids in Closing Sale for Larger Unit

PHILADELPHIA — Being without that most common of all salesmen's tools, a fountain pen, didn't keep William A. Adams of Strawbridge & Clothier's appliance department from closing a refrigerator sale recently.

On his way to the home of a prospect who was interested in a 4-cu. ft. General Electric refrigerator, Mr. Adams discovered he had left his fountain pen at home. Being almost to his prospect's house, he smartly decided to pick up a pen enroute. So he went into a neighborhood drug store, borrowed a pen, left his watch as security.

Now more determined than ever, Mr. Adams closed the sale—for a 5-cu. ft. box instead of the 4-cu. ft. one intended—and got his watch out of hock by returning the pen.

## New Twin-73 FEDDERS UNIT COOLERS



Showing attractive cabinet design and minimum height of Fedders Twin-73 Unit Coolers. Adjustable louvers can be furnished as extra equipment when specified.

Rear View showing two rubber mounted motors, fans and Fedders Thermostatic Expansion Valve.

Two new Twin-73 Coolers equipped with two motors and fans mounted side by side and having double the cooling capacity of the Single type Series 73 Unit Coolers with no increase in height are announced to further complete the Fedders line.

They are designed for installation in large walk-in refrigerators and storage rooms as well as for use in comfort cooling in stores, offices, work rooms, restaurants and other similar locations.

Attractively designed cabinets are made

of permanently rust-proof metal. All parts, including bolts, nuts, washers and hanger brackets are rust-proof. Conveniently located hanger brackets are furnished on the top of the unit and provide for quick, easy installation. Write for Bulletin 304.

**FEDDERS**  
MANUFACTURING COMPANY  
57 TONAWANDA ST., BUFFALO, N. Y.

ARE YOU GETTING YOUR COPY OF THE FEDDERS NEWS?



# President J. D. Colyer Gives Manufacturers' Viewpoint in

## Jobber Functions & Sales Policy Problems Are Big Questions Facing Parts Manufacturers

By J. D. Colyer, President, Refrigeration Parts and Supplies Manufacturers Assn. (Address before Refrigeration Parts and Supplies Manufacturers Assn.)

"A TRADE ASSOCIATION may be defined as a group of companies in a field of commerce or industry with a membership so representative that all problems pertaining to this field can be adequately presented for common consideration and with a purpose of developing this field so as to have the enterprises in it conducted with the greatest economy and efficiency.

"When a man buys the securities of a business corporation, he is actually joining a cooperative business, and he looks forward to a profit on his investment. Hence the motive of his investment is simple and understandable.

"However, when a man joins a trade association, he cannot anticipate a direct profit on his membership dues, for which reason his motives and contacts are not as easily definable. Associations should and usually do pay dividends, but not in the usual sense, because to get the best return from your investment in a trade association, a man must invest part of himself as well as his money for membership dues. He or his firm must assume a share of the responsibility for the association activities, because the effective performance of an association depends not only on money but also on the cooperation of its members.

### INTIMATE CONTACTS

"Associations make possible intimate contacts with other members in addition to bringing each member into direct contact with operations in his industry. Information is interchanged, standards of business are set up, and many other matters, which heretofore have been a mystery, become fairly simple.

"The relationship thus provided by an association could not be obtained otherwise because people do not enter into such contacts with others in their trade or industry without having a clearly understood purpose. Our association, like others, was formed because it was apparent to many of us that there were many problems in common.

"An association does much to replace distrust and suspicion (usually based on lack of knowledge and acts of hostility based on short-sighted self-interest) with feelings of friendliness and acts of cooperation.

"It makes the men in that particular line of business both better informed and more human. It enlarges their capacities to work together for common objectives by bringing to their minds a clearer conception of their common interests.

"It is returns of that nature which can be expected from your investment in an association, and these returns, of course, differ greatly from those of an investment in a corporation.

"Continuing our comparison between an association and a corporation, we all know how a corporation is managed and operated. While an association is not identical, in many ways the objectives are the same. In a corporation, the board of directors tells the officers what to do, and such orders must be carried out. An association is different, because its suc-

cess depends on how well ideas and views of its members can be crystallized on important issues.

"Therefore, while its board of directors is the governing body, and as such wishes to know at all times the attitude and views of the members of the association, the board and officers cannot tell the members what to do.

"All the board of directors of an association can do is to gather all the facts they possibly can on any problems which come up, and present these facts to the members. The members then of their own free will and accord arrive in their thinking of what is the right thing for them to do.

### DUTIES OF SECRETARY

"Much of the work in carrying out the wishes of an association rests with the secretary, whose shoulders must at times carry a great deal of weight. The secretary should be qualified by special training and experience for his job. He should possess to a peculiar degree that full insight and unprejudiced character which will enable him to get his employers to work for him and to respect the impartial advice he is in a position to give.

"That is the manner in which your officers, directors, and secretary have been trying to conduct themselves, and while it is not always apparent to everyone that we are working to that end, our purpose is ever before us.

"I have tried to tell you why our association was formed and how we have tried to conduct it. The issue is confused at times by changes which all of us have noticed in the last few years: a much-changed order of social and economic conditions, changing competitive conditions, new people in business, and new opportunities. Yet competitors today interchange experience, information, and carry on cooperative activities in a manner which yesterday would have seemed fantastic.

### TWO BIG QUESTIONS

"Now as to the problems which tend to complicate the smooth operation of your business: Each time we have a directors' meeting, two things seem to stand out above all others. Many things come up, of course, but two things are mentioned more often than anything else.

FIRST—the definition of a jobber. "Some of us think that once a jobber is defined it should never again be necessary to explain the definition to members of the association. I do not entirely agree with this view,

because in my own 20 years of experience, it is apparent to me that the definition of a jobber has been a problem for many, many years, and when our children are walking around on crutches, I suspect that they will be confronted by the question of 'What is a jobber?'

"Why? Because it is human to err, and as long as human beings conduct business, each placing their own interpretation on definitions, the definition of a jobber should be discussed at regular intervals. For that reason, I was glad to see a restatement of this definition, by Mr. Jack Forbes, recently appear in the AIR CONDITIONING AND REFRIGERATION NEWS.

"However, I do think that today manufacturers are all more conscious of what constitutes a jobber and are more careful in their selection. Of course, the problem of selecting jobbers is more difficult today than it was years ago. At one time there were perhaps only one or two legitimate jobbers in each city, each of whom probably bought their requirements from a different manufacturer.

"Today, however, there are usually several jobbers in most large cities, and with modern transportation being as efficient as it is, these large jobbers not only solicit business in their own cities but compete for it in neighboring cities sometimes as far as 200 miles apart.

### THE QUESTION OF PUBLISHED SALES POLICIES

"This brings up the second question which comes before the board of directors regularly at their meetings, and that is the question of manufacturers publishing sales policies.

"This is of greater importance today because there are now six or a dozen companies manufacturing articles in the same line of business, whereas formerly there were perhaps only one or two. With so many people competing for his business, the jobber must know more about the various sales policies of the companies from whom he is buying, and the manufacturers should not expect the jobber to remember the verbal statements of their salesmen.

"Furthermore, the jobber should have something in black and white—not merely a letter—but a printed statement—from each company who is soliciting his business, so that he can study these policies to see where in they differ, after which he can make an intelligent decision as to which company he is going to make his source of supply.

"From the manufacturers' standpoint, it would also seem best if everyone would publish a policy. If a printed policy is distributed far and wide to all customers, it is not only easier to sell your products but it is easier for your salesmen to speed up their jobs by having something definite to which they can refer while calling on their customers.

"Furthermore, because verbal statements made by salesmen are soon forgotten, your jobber, after he reads the printed policy, will write for further information if he doesn't thoroughly understand what you have printed. Also, if he detects something in the policy which he thinks is detrimental to his own best interests, he is quite likely to call it to the attention of the manufacturer, which would be a help to the manufacturer because what does not meet with the approval of one customer is quite likely to be received in the same manner by others.

"Tomorrow I am going to strongly urge and recommend to the service engineers that they show on their letterheads what function they perform, whether they are contractors, engineers, service men, or what; as well as discouraging their members to write manufacturers for jobbers' prices.

"I think the jobber should also make it clear on his stationery, in his catalogs, and on his place of business that he is a wholesaler—a jobber—and that he does not engage in service work or contracting. Likewise, we manufacturers should no longer expect that when a customer receives a letter from us that it will be obvious that we are manufacturers. We should also make it apparent on our letterheads and in our catalogs that we are manufacturers." formed, it is remarkable to note the

## Continuation of Cooperative Spirit of Manufacturers' and Jobbers' Groups Is Urged by Industry Leader

By J. D. Colyer, President, Refrigeration Parts and Supplies Manufacturers Association (Address before National Refrigeration Supply Jobbers Assn.)

"DURING the past two years, we have come a long way—jobbers are seeing eye to eye with each other—manufacturers have found many things of common interest—and jobbers and manufacturers have found that there are many problems of importance to both associations. "Comparing the present with two years ago when our associations were

which cannot always be solved as quickly as you jobbers would like to see them. However, your problems are ever before us, and we welcome and solicit your ideas at all times.

"This convention provides an opportunity to accomplish many things, and from the plans and preparations which have been made, the committees which were appointed, and the

### Manufacturers' Representatives at Chicago Meeting



(Above) A West Coast jobber meets up with the Wolverine Tube Co. delegation. Left to right are A. S. Kingler, H. J. Hooks, J. A. Marshall (partially hidden), all of Wolverine Tube Co.; C. F. "Sandy" Pratt of the California Refrigerator Co., San Fran-

cisco; John Moore and A. B. Hard of Wolverine. (Below) Kerotest Mfg. Co.'s midwest representatives turned out in full force for the conventions. From left to right are G. R. Postlewait, G. C. Taylor, F. M. Eversden, and E. J. Kimm.

accomplishments that have been made and the friendly competitive spirit which now exists. Many problems have been ironed out in a very satisfactory manner, and in a way that was thought impossible two years ago.

"In many respects we are still very young, and while we have learned a lot, there is still much to be done, and there always will be.

"We have had two years of the best business the refrigeration industry has ever seen. At the moment we are all faced with a national and international political and economic situation which is confusing. Yet these are common problems which the business man must face courageously, seriously, and with an unprejudiced mind. I mention these things only because our associations are national in scope and in a very small way our problems parallel those of the nation.

"The present federal administration has a hard task in trying to guide the nation through difficulties in such a way that legislation enacted will be satisfactory to men in California, Wyoming, New York, or Alabama alike. And so, too, it is equally difficult for jobbers and manufacturers to adopt policies which carry proportionate benefits to jobbers in all sections of the nation. But I think that all problems of the jobbers and manufacturers should be given most careful consideration by the members of both associations in an effort to bring about policies and decisions that will result in the greatest good for the greatest number, with due consideration for the fact that we manufacturers are constantly confronted with big problems

many things on the agenda for our meetings, I feel sure that our mutual problems will be discussed while here with little confusion and in a most pleasant and harmonious manner.

"My message is purposely short as I know you have a large day ahead of you and I do not want to encroach on your time. Most of you have come a long way at great expense, and I suggest that you make the most of your opportunities by spending your time wisely attending all meetings and sessions with a serious purpose in mind."

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MACHINE MAKERS like ARTIE because its favorable combination of properties permits building compact, light-weight units that operate efficiently and economically.

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ASK YOUR JOBBER ABOUT TAG POCKET THERMOMETERS AND CONTROLS.

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# Addresses to Three Industry Associations at Chicago

## Colyer Ask Service Engineers Not to Seek Jobbers' Prices on Supplies Bought Directly from Manufacturers

By J. D. Colyer, President, Refrigeration Parts and Supplies Manufacturers Association (Address before Refrigeration Service Engineers Society)

**R**ECENTLY our secretary received a copy of your resolution, which has since appeared in your official paper, the Refrigeration Service Engineer.

"I think I can say that in general your resolution strikes a very responsive chord with both jobbers and manufacturers.

"Time will not permit me to analyze each item, but I am sure the jobbers will welcome with open arms item 2 wherein you pledge yourselves to do business only with members of the jobbers' association. However, I think it is of equal or greater importance that in your purchases you make sure you are buying from someone who does not also compete with you.

"The problem of a manufacturer making sure that he quotes jobbers' prices to people operating as jobbers only—who do no contracting or service work—is not an easy one. While manufacturers generally use great care in the selection of their jobbers, nevertheless, the manufacturers are often greatly misled by letters they receive from those who claim to be buying at jobbers' prices from other manufacturers, and by those who expect jobbers' prices even though they are definitely service engineers and contractors.

"We realize that your aims are high and that the great majority of you are as anxious to do an ethical and profitable business as we manufacturers are, but you can be of great assistance to yourselves if you will take appropriate action both in your local chapters and in your national meeting to discourage the practice of asking for jobbers' prices.

"You are technical men by professional or practical training. Why not tell the world what your mission in life is? Why not advertise to the public that you are engineers, contractors, and servicemen, and display this function on your letterhead and place of business? Why not let it be known what you have for sale, so that your customers can easily decide to engage you for the work you were trained to do?

"Jobbers frequently state on letterheads: 'Wholesale only—we do not

contracting.' Why don't you take a lesson from the master plumber who advertises in his window the fact that he is a master plumber?

"I can easily see how you may at times consider that since you are the link between the product and the consuming public that it should be right that you receive jobbers' prices. Such things are purely a matter of education, and you can do much to bring about resolutions which will elevate the servicing and contracting profession to its rightful place.

"I know you will agree with the simple statement of C. F. Kettering, who is perhaps the most outstanding living engineer, and certainly a genius, when he said, 'A problem thoroughly understood is fairly simple.' Even though manufacturers are making a careful study of the distribution problem, like any other problem, it is always easy to find 10 men who can state it but it is another and more difficult task to find the solution.

"The manufacturers' problem is also somewhat complicated today by the Robinson-Patman Act, because as we understand this Act, it is a violation to compete with your own customers for business.

"However, your cooperation in making sure you purchase from those companies, large or small, who have good sound sales policies which promote your best interests, will make it that much easier for everyone to find a solution to the distribution problem.

"I am glad to see such good attendance here at your convention, and hope you will spend as much time as possible in making a careful inspection of the products which are on display."

### Friez Issues Catalog on Conditioning Controls

BALTIMORE—Julien P. Friez & Sons, Inc., has issued a condensed catalog of air-conditioning instruments and controls.

This eight-page folder, known as Bulletin K, contains illustrations, brief descriptions, and list prices of the complete range of Friez instruments for the automatic controlling, indicating, recording, testing, and measuring of a broad variety of air conditions.

More detailed bulletins are available concerning any of the products listed in the condensed catalog.

### Packless Markets Line of Self-Flaring Couplings

LONG ISLAND CITY, N. Y.—Packless Metal Products Corp. has just issued a new bulletin describing its line of self-flaring tube couplings.

Specifications of these couplings are given, and proper installation methods are described and illustrated.

The booklet also contains considerable data on Packless copper tubing, which is advocated for use with Packless self-flaring couplings.

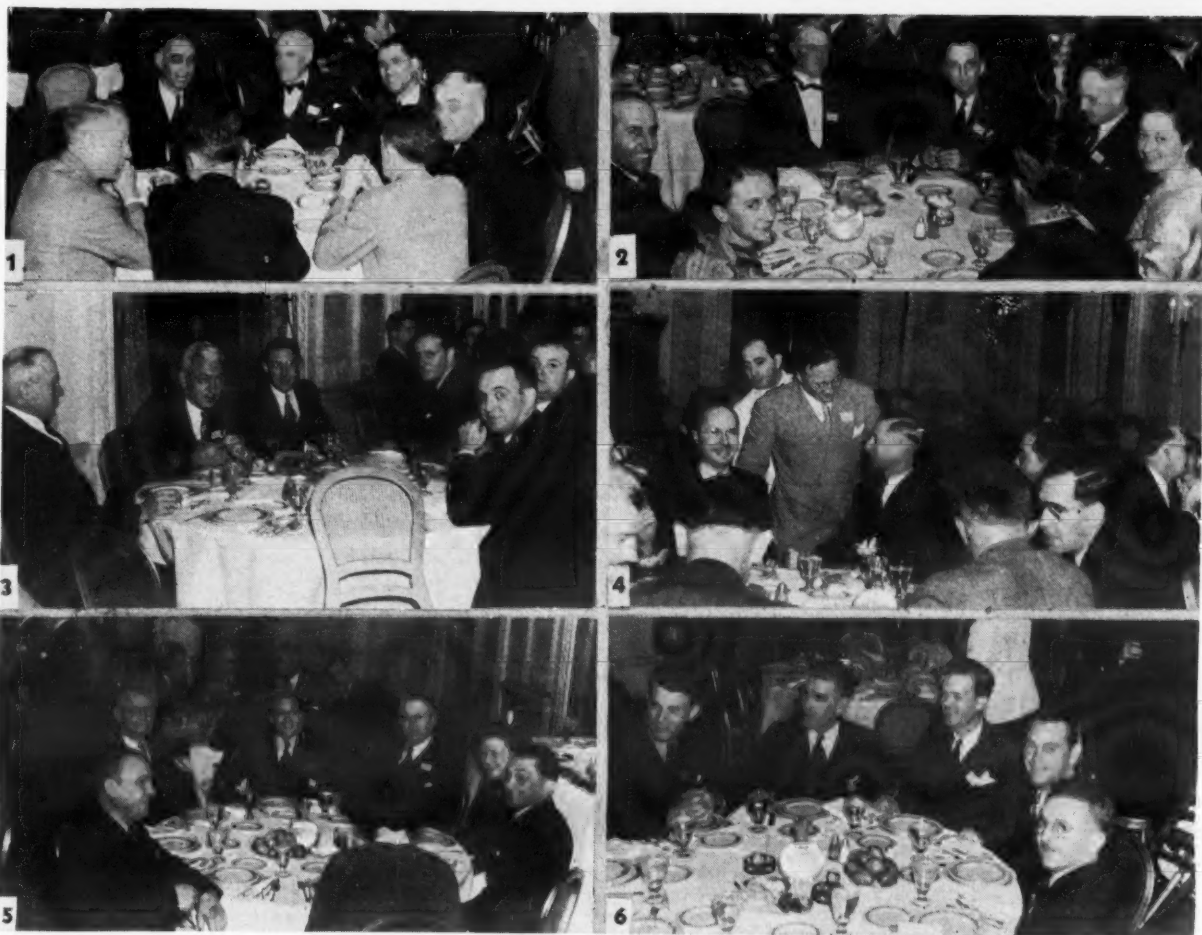
### McCaughna Leaves Norge to Manage Foundry

FLINT, Mich.—Arthur McCaughna has resigned from the engineering department of the Norge division of Borg-Warner Corp. to succeed Carl W. Bonbright as president of General Foundry & Mfg. Co. here, according to Mr. Bonbright.

Mr. McCaughna has held executive positions with Kelvinator Corp. and Budd Mfg. Co., and has had long experience in factory procedure and production practices.

Mr. Bonbright, who resigned as president of the foundry to devote more of his time to other activities, remains connected with the firm both as an executive and as director.

## When the Parts Manufacturers Gave a Banquet for the Jobbers



Austin Jones, manufacturer's representative in Omaha and camera enthusiast, got these "shots" at the banquet given Nov. 2 by parts manufacturers for the refrigeration jobbers.

(1) Facing toward the camera on the far side of the table are (left to right) George B. Harbster, Pacific Metals Co., Los Angeles; W. A. Leonard, Imperial Brass Mfg. Co.; A. H. Holcomb, Victor Sales Co., Philadelphia; R. E. Hollstrom, Imperial Brass.

(2) Virginia Smelting Co. had a large group of representatives at the conventions. The gentleman in evening dress is C. W. Johnston, and at his left around the table are R. H. Israel, W. C. Dever, Margaret Blanchard, Marjorie Campbell, and Robert LeBaron.

(3) A group from Chase Brass & Copper Co. (left to right) F. H. Barton, J. S. Coe, V. A. Eggert, D. V. Sutton, W. L. Brown, and T. J. Bold.

(4) The man with the big smile is M. W. Knight of Peerless of America, Inc.; standing is J. S. Forbes of Kerotest Mfg. Co. who is talking to L. H. Roberts, Forslund Pump & Machinery Co., Kansas City; to Mr. Roberts' left and barely visible is E. P. Sorenson, Airo Supply Co., Chicago, and to his left is H. M. Milne of Montreal, Canada.

(5) J. M. Oberc, Detroit jobber; C. F. "Sandy" Pratt, California Refrigerator Co., San Francisco; O. F. Nelson and F. B. Riley, American Injector Co.; Mrs. Oberc; L. L. Hosier, Mayson Mfg. Co.; Mrs. Riley.

(6) An 80% California group. From left to right are Peter H. Askew, Refrigeration Supplies Distributor, Los Angeles; Van D. Clothier, manufacturers' representative in Los Angeles;

A. B. Hard, Wolverine Tube Co.; F. W. Gillett, Refrigeration Parts Exchange, Los Angeles; L. P. Roth, Refrigeration Service, Inc., of Los Angeles.

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Everybody has been claiming super-convenience, but who proved it? WESTINGHOUSE — storage facilities that cut shopping trips in half... KITCHEN-PROVED!

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★

Everybody's been claiming full power, but who proved it? WESTINGHOUSE — the Economizer Unit, 10 hours out of 12, uses no current at all... KITCHEN-PROVED!

But this was only the **BEGINNING** for **GREAT PROOF**

**MORE CONVINCING THAN EVER!** More complete! More powerful! Detailed evidence of *Kitchen-proved Savings* in families of 2 to 6 persons... with food budgets of \$27 to \$120 a month!

**PERSONAL PROOF FOR EVERYONE!** From the day laborer's family to the wife of a big business executive! Proof from small towns, and big cities! For the "re-

placement" buyer as well as the new purchaser! And what proof it is! All new *Kitchen-proved Facts*, from hundreds of HOME Proving Kitchens! *Sensational Facts*—many never before available!

**IT'S EXCLUSIVE!** Get in on this fast moving selling program—backed by the strongest, most extensive promotion campaign in Westinghouse history! It's

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*Your own Community*  
SELL FROM STRONG LOCAL PERSONAL PROOF

Here's a "natural" for the alert dealer—an Official Proving Kitchen "right on the ground," in the home of one of your customers! Profit from the resulting publicity and local interest! Sell from "first hand" facts, close at home! It's a tested and proved plan that's already brought astounding results! And... it's only one of the new features of the 1938 Kitchen-proved Program.

## 1938 STARTS TODAY!

Not on the New  
Personal Proof  
time to lose!



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*Kitchen-Proved!*  
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- Thrifty Food Protection ✓
- Time-saving Convenience ✓
- Fast Freezing . . . . . ✓
- Full Power . . . . . ✓
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economy, but who proved it?  
NGHOUSE — with current  
ption less than one kilowatt  
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## PROOF in 1938

ive! Geared to the 1938 market!  
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ct has wanted! "Kitchen-proved"  
Westinghouse to a tremendous  
gain in 1937... and we're swinging  
again with even more powerful  
en Proof in '38.  
GET STARTED EARLY! THE COUPON  
BRING YOU FULL PARTICULARS!

## ASK ABOUT New Finance Plans

For better display... for  
easier selling... for more  
sales to each customer.  
They permit even the small-  
est dealer to carry impressive  
display stock, for as little as  
15c a day. They speed up your  
retail selling... enable you to  
sell old customers additional  
appliances, at unusually  
attractive terms.

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to help us stock and sell ☐

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Address \_\_\_\_\_

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Westinghouse "Band Wagon" and Profit from  
retail Christmas Sales! There's no  
so! Coupon today for full details!

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## Electric Range Coming Fast

REFRIGERATORS and washing machines are generally considered the giants of the home appliance industry, and as such generally receive the most attention, the heaviest promotion, the largest display, and the most effective selling.

But in the last couple of years, the electric range (formerly slow-moving) has stepped up into the higher volume brackets, and now demands the most thoughtful treatment by all appliance dealers.

### 318,000 Electric Ranges Sold During 1936

Whereas last year more than 2,000,000 electric refrigerators and 1,500,000 electric washers were sold to American homes, only 318,000 electric ranges were sold. Yet, when you stop to recall the skimpy electric range figures of previous years (excepting 1935, which was also a banner year, with 215,000 sold), that third-of-a-million record is something to make any retailer sit up and take notice.

One should also note that the combined sales of gas and electric ranges run well over the million mark annually, and that the electric range is gaining steadily on the gas range. Ten years ago at least 10 gas ranges were sold for every electric range; today the figure is closer to 5 to 1.

### Product Delayed Sales For a Long Time

For a long time the electric range was held back because of the product. Housewives said it was "slow." And even after the product was improved, so that it compared favorably in speed with the undeniably efficient gas range, the impression still prevailed. Manufacturers were stymied with small volumes, and could not afford to give the improved electric range the promotion it deserved.

Then the "big boys," such as Hotpoint, Westinghouse, and General Electric, became impatient. With almost unlimited resources at their disposal, they reached back into the sock for real money to promote these slow-moving ranges. Both G-E and Westinghouse made the further move of giving ranges to their specialty outlets to sell.

### Utilities Sold Ranges To Build Current Load

But here was another obstacle. Ranges had always been sold chiefly by the utilities. (Some observers have stoutly maintained that the utilities purposely held back the electric range; for so many of them were "combination" operations—selling both gas and electricity—that they feared the electric range might cut into gas cooking, which provided the principle means of domestic gas consumption).

The utilities had been accustomed to selling ranges at comparatively low prices, and on small margins. Being quite a juice-eater, the range was sold primarily because it would burn electric current, and even if it were sold at little or no profit, the utility was more than satisfied.

Now specialty selling requires long margins. Promotion is expensive; so are specialty salesmen. Margins had to be upped. All this took quite a bit of wangling; but the higher prices were justified on the basis of added convenience features.

Result: electric range sales have shown the highest percentage of increase of any electrical appliance in the last two years. And, incidentally, gas range sales haven't suffered a bit.

### Demands of Dealers Lead To New Range Companies

Noting the success of their competitors with the electric range, appliance dealers who had been specializing on refrigerators began to look around for ranges, too. They found that most of the old-time range manufacturers—with Hotpoint a conspicuous exception—were unaccustomed to talking discounts in terms that specialty dealers could understand. Nor did they know much about directing a national corps of specialty outlets.

Word of this began to get back to headquarters of the refrigerator manufacturers. And now Kelvinator, Norge, and Frigidaire are all producing electric ranges for their dealers. Norge has a gas range, as well. It is being hinted that one or two other manufacturers may be in the range business before many moons have come and gone.

### Low Saturation Indicates Bright Sales Outlook

As a result of all this activity, an exceedingly bright future can be predicted for electric range volume. Specialty selling thrives on competition. Saturation of the market is ridiculously low. And the market is tremendously improved.

Even so, considerable thinking must be done by the entire industry in order to insure that the business will be as profitable as refrigerator selling has been. Utilities still sell more than 60% of the total volume, despite the heavy inroads made by specialty outlets during the last two and a half years. And the utilities are still selling ranges with an eye

toward load building, rather than profit on the sales.

Margins on ranges are still not long enough to allow any specialty dealer to cut prices and get away with it. In elucidation of this point, the Electric Appliance Dealers' Association of Brooklyn recently issued a bulletin containing these statements:

"Just now, one of the items in which we are most interested—and very properly so—is the electric range. Take the case of a low-priced range selling at, say, \$100.

"The fixed expenses of any range sales, no matter what the price of the range, are delivery, \$3.00 net, and a set of aluminum cooking utensils, \$11.50, making an immediate net out-of-pocket expense of \$14.50, regardless of hell, high water, and halitosis.

"Then there is the matter of the very moderate but ever-present utility salesman's commission of 3% and the supervisor's commission of 1%, which varies in amount with the selling price of the range, and in the case of the \$100 range which we are considering, means \$4.00 more out of the margin.

"As we see, therefore, the unescapable fixed expenses on the sale of a \$100 range are \$18.50.

"Now, the funny thing about the range selling for as low a price as \$100 is that most makes penalize the dealer on these low-priced numbers by giving him a smaller gross margin than they would on a more expensive range, making it even more difficult for a dealer to cover his general store overhead on such a sale.

"Assuming even a gross margin of 33 1/3%, which is just about tops on low-priced ranges, all a dealer has to play with is the amount of \$33.33 on a \$100 list job. Deducting the \$18.50 already mentioned leaves \$14.83 from which there is a financing hold-back of another \$2.00, leaving the princely sum of \$12.83 to pacify the landlord, the telephone company, the office help, the dealer's own salesmen, and to buy shoes for the baby.

"Such a headache is surely bad enough without making it even worse by giving away any part of this already inadequate margin."

### Westinghouse Survey Reports On Successful Dealers

Reese Mills, manager of the Westinghouse range department, recently made a survey of Westinghouse dealers who were doing both a satisfactory and profitable volume on ranges. He found that these dealers were:

- (1) Established in handsome stores.
- (2) Displaying the product, with especial emphasis on placing the range in its proper environment—a complete electric kitchen.
- (3) Employing, training, and directing a crew of outside salesmen; and maintaining their morale with periodic sales meetings and contests.
- (4) Teaching their salesmen to cook; and insisting on proper demonstration of the range.
- (5) Calling back on the owner to see that the range was being used properly and effectively, and to secure new leads.
- (6) Advertising the ranges well in local papers.
- (7) Making mass demonstrations.
- (8) Capitalizing on user satisfaction in various ingenious ways.

### Leading Sales Appeals For Electric Ranges

Leading sales appeals on the range include cleanliness, economy of operation, convenience, better cooking results, and special features. Cool cooking is stressed more and more (this sales argument justifies Frigidaire in applying its refrigeration name to its range). Conserving a woman's beauty by means of electric cooking is often found a more potent sales appeal than the standard one of saving her time.

The range has definitely become a big-time appliance, and seems destined to become a more and more important part of the specialty selling picture. It deserves the best thought and efforts of every dealer.

## LETTERS

### Qualifications for Directory Listings

Sherer-Gillett Co.  
Manufacturers of Refrigerator  
Display Cases—Market Coolers  
Display Equipment for Food Stores  
Marshall, Mich.  
Nov. 4, 1937.

Sirs:

I have just had the opportunity of looking through your Commercial Refrigeration Buyers' Guide recently published. The listings under display cases, walk-in, and reach-in refrigerators does not show very accurate thinking on the part of the compiler.

In the first place, there are a great many important omissions. One that strikes close to home is the omission of the Sherer-Gillett Co., Ltd., Guelph, Ontario, although the Ruddy Mfg. Co., Ltd., of Brantford, Ontario, is included. Other omissions no doubt have been called to your attention.

Equally important, in my opinion, is the inclusion of certain manufacturers who have no proper place in the listing of manufacturers of display cases and coolers.

I recommend that in future compilations you set up some restrictions to keep out the fellows who aren't properly to be considered as manufacturers. Possibly your limitation could be based on volume of business done or capital invested or something of that sort, but certainly some of these people you list don't deserve recognition much more than the mechanic who builds a case or two in his garage between jobs.

K. D. ZENKERE,  
Sales Manager.

Answer: Listings in the "Commercial Refrigeration Buyers' Guide," which was an advance edition of one section of the 1938 Directory were limited to a main sales office address for each company, hence information regarding branch offices and branch factories was omitted.

Since the Sherer-Gillett Co., Ltd., of Guelph, Ont., is undoubtedly a separate corporation, our directory department was in error. It will be listed along with other Canadian companies in the final edition of the 1938 Directory (No. D-1) which will go to press Nov. 20.

Early in 1938 we are planning to issue another Directory (No. D-2) which will contain the information which has appeared in the geographic section of previous directories. The listings in this book will include the location of factories, branch offices, executive personnel, etc.

Referring to your comment regarding "the inclusion of certain manufacturers who have no proper place in the listing of manufacturers of display cases and coolers," we have received similar criticisms from others. It appears that manufacturers of commercial refrigerators are particularly sensitive on this point.

In explanation of our policy regarding directory listings, it is our desire to include only reputable concerns that have facilities for supplying the product indicated by the classification. The Directory is edited from the viewpoint of the buyer of refrigeration and air-conditioning equipment who pays one dollar for the book for the sole purpose of getting information regarding all available sources of supply.

We cannot assume that such buyers are interested only in large companies. On the contrary, our experience shows that many buyers definitely seek small suppliers. Furthermore, we cannot take the attitude that only large and well-known companies always make good products and that all small and relatively unknown companies always make poor products.

It is necessary to keep in mind that the business man who reads the News, or who uses the Directory, usually rates himself as a smart buyer. He wants information regarding suppliers and their products but he considers himself amply able to look out for his own interests in making a deal. So far as protecting the buyer is concerned, our observations would lead us to believe that the buyer outsmarts the supplier about as often as sharp practice works the reverse way. Perhaps that is why so many small manufacturers stay small—they lack "what it takes" to get a proper price for their products.

If we considered Directory listings entirely from our own viewpoint as publishers we might logically take the attitude that only advertisers are worthy of listing. However, we are in the business of publishing books that will sell and we, therefore, endeavor to provide the information desired by those who buy the books.

We are also aware that there is a demand for information regarding suppliers who do not advertise their products. In fact, we receive many letters from distributors, manufacturers' agents, exporters, foreign buyers, and others who definitely ask for information regarding suppliers of certain equipment which is not advertised. They explain that they have already sent inquiries to all advertisers or that the advertised lines are already represented in their territory. In brief, their question is: "Who else makes this type of equipment?"

It is important to note further that, in publishing an all-industry Directory, we do not attempt to evaluate the merits of either companies or products. Advertising space is offered at a nominal rate wherein manufacturers may present the merits of their products and services according to their own ideas. The advertisers naturally get the greatest benefit from the wide distribution of the Directory because experienced buyers know that concerns which are merely listed (and whose products are not advertised in a recognized industry publication) are quite likely to be of questionable caliber.

We will continue our practice of eliminating names of any companies which we have reason to believe are unreliable but we cannot agree with you, and some others who have written to us, that it is our function as publishers of the Directory to list only those companies which have attained a certain volume of business or invested a certain amount of capital.

Whenever the manufacturers of any classification of equipment agree upon standards of value, or set up specifications for satisfactory performance, or arrive at a definition of reliability, etc., we are always glad to publish such information for the guidance of readers. In brief, we believe that you, as manufacturers of commercial equipment, should set up such standards rather than expect us, as publishers, to determine the rules for the discriminating buyer to follow.

### Favors Red Book Method Of Distributing Catalogs

General Electric Co.  
1 River Rd., Schenectady, N. Y.  
Nov. 8, 1937.

Gentlemen:

Thank you for my copy of the Red Book which I received this morning. I feel that this method of distributing catalogs and other literature will be a valuable service to the refrigeration and air-conditioning industry and that users will find this material quite helpful as the volume is made more complete.

D. A. YATES,  
Motor Division,  
Industrial Department.

### Approves Articles on Evaporative Condenser

Cooling & Heating, Inc.  
364 N. High St., Columbus, Ohio  
October 27, 1937.

Editor:

We are very much pleased with the evaporative condenser article on page 16 of the October 20 issue.

DEWITT H. WYATT.

### Instructive Articles On Air Conditioning

Cooney Refrigeration Co., Inc.  
493 Franklin St., Buffalo, N. Y.

Editor:

You are doing a real service to the trade with the series of articles on air-conditioning dealerships, and all presented to date have been very interesting and instructive.

E. R. COONEY, President.

C. J. Yon  
2119 18th St., Altoona, Pa.

Editor:

Will you please change my mailing address of AIR CONDITIONING AND REFRIGERATION NEWS from State College, Pa., to 2119 18th St., Altoona, Pa. I enjoy each issue very much and do not wish to miss one of them.

C. J. YON.



## Service Engineers Hear How They Can Improve Their Business; Consider Plan To Study Costs of Certain Operations

(Concluded from Page 1, Column 2)  
strongest bids for the 1938 convention, but no definite decision regarding the time or place of the 1938 convention was made during last week's meeting.

Among the progressive steps taken at the convention were the adoption of uniform symbols for drafting or layouts, the offering of a standard form for service work cost accounting, and a plan for making a survey to determine the unit labor cost on standard types of service work.

The committee which worked out the uniform symbols was headed by Joe Askin, chief engineer of Fedders Mfg. Co. The committee which prepared the uniform cost accounting forms was headed by Harry Drownes of Drownes Refrigeration Service, Chicago.

In presenting the proposal for a unit labor survey, P. B. Reed, service manager for Servel, Inc., pointed to the work that has been done by electrical contractors with regard to this matter.

A check-up on electrical contractors with respect to their estimate of the cost of any fairly standard job would show, said Mr. Reed, that the estimates would all be pretty much in line.

This was brought about by the activity of an electrical contractors' association, which made a survey for the purpose of finding out how much labor was required for certain types of operations that were more or less standard in their work, and from the survey a schedule of labor costs was drawn up which made it possible for the contractor to give a complete cost on most every job about which a customer might inquire.

Purpose of the survey to be made among the R.S.E.S. members, said Mr. Reed, will be to determine the amount of labor generally required for certain common service operations.

When this has been accomplished, it will then be possible to make some estimate for a customer of what a particular service operation will cost by (1) getting the cost per unit of material to be used, and (2) getting the unit of labor for each operation or piece of material.

J. D. Colyer of Wolverine Tube Co., president of the Refrigeration Parts and Supplies Manufacturers Association, addressed the convention on the opening day.

Mr. Colyer warned the R.S.E.S. against adopting resolutions concerning from what companies its members should purchase supplies, since such resolutions would be unlikely to "hold water" in a court of law.

The president of the parts manufacturers' association urged the service engineers to undertake a vigorous campaign to "let the public know who you are"—to advertise the fact that the service engineer is a trained technician and that membership in the R.S.E.S. means something.

He advised them to take a lesson from the Master Plumbers' Association, which has done a noteworthy job of publicizing the nature of its organization.

Henry W. Merkel of the Merkel Bros. Co., newly elected president of the National Refrigeration Supply Jobbers Association, spoke briefly to the service engineers.

W. D. Ambrose, service manager of the refrigeration division of Mills Novelty Co., spoke to the R.S.E.S. members on two subjects—the first concerning the requirements of the independent service man, and the second discussing the service man's opportunities in hooking up with the national service organization of a manufacturer.

Mr. Ambrose listed the following as being the main factors for the success of an independent service man:

1. Efficiency. ("Any job well done is another step in the building of a reputation.")

2. Neatness. ("Go about your work in a businesslike manner, pick up tools and parts when finished, clean up any mess.")

3. Personality. ("You must be a diplomat, and sell people that you are the right sort of person to do business with. Be neatly dressed and control your temper.")

4. Keep the faith. ("Do the best job you can, no matter what the make of machine, or how bad the job.")

5. Progress. ("Your close contact with equipment enables you to suggest improvements, furnish new ideas to manufacturers which will increase the greatness of your chosen field.")

6. Keep good records. ("The service man should so organize himself and his business that he can handle the record, bookkeeping, and report end

## Convention Groups Were in a Gay Mood at the R.S.E.S. Banquet



1. Clarence F. "Sandy" Pratt of the California Refrigerator Co. put forth a lot of promotional effort to get over the idea that the conventions in 1939 should be held in San Francisco, at which time the city's big exposition will open. Note the book held by the man second from left and the sign on the back wall. In the picture from left to right are H. M. Bernhart, Joe Halub, R. M. McClure, Mr. Pratt, and F. M. Cockrell, publisher of the News.

2. This was pretty much of a "Ranco" table at the R.S.E.S. banquet. From left to right are Mrs. R. R. Dunlop, E. V. Dunbar, J. D. Merkle, J. B. Venters, Mrs. J. D. Merkle, M. S. Vitis, G. E. Graff, R. R. Dunlop.

3. Sam Fretz of the Jamita Co., Jacksonville, Fla., jobber (the young fellow in the left foreground) was the fete guest at the Ansul Chemical Co. table at the service engineers society

banquet. Others in the party, reading clockwise around the table from Mr. Fretz' left, are Franklin Wedge, F. J. Hood, Ann Bolen, H. V. Higley, L. C. McKesson, W. O. Walker, and F. G. Hood.

4. A Chicago group took over this table at the R.S.E.S. banquet. The lady in the center foreground is Mrs. B. B. Dawes. To her left around the table are A. Gerat of the A. F. Refrigeration Service; Mrs. R. B. Mitchell; R. B. Mitchell of the H. Channon Co., Chicago jobber; Mrs. Harold Seifert; Harold Seifert, Seifert's Service; Alph Gerat of the A. G. Refrigeration Service; B. B. Dawes, the H. Channon Co.; Deane Perham, an official of the Chicago Master Steamfitters Association, and chairman of the Chicago section of the American Society of Refrigerating Engineers.

5. Left to right are Herman Goldberg of the Herman Goldberg Co.,

Chicago; K. M. Newcum, service editor of AIR CONDITIONING AND REFRIGERATION NEWS; Mrs. J. M. Oberc; F. B. Riley of American Injector Co.; Mrs. Riley; J. M. Oberc and D. Davey of J. M. Oberc, Inc., Detroit.

6. Seven different states are represented by individuals in this picture. Starting with the man wearing glasses in the left foreground and reading clockwise around the table, the people sitting at the table are H. R. Spivak, Cleveland; B. F. Anthony, St. Louis; S. J. Majeski, Chicago; Milton M. Katz, Trenton, N. J.; George Munzer, New York City; R. M. Gillmer, New Castle, Pa.; Norman C. Muller, Oberlin, Ohio; Don Samuels, Chicago. Standing up behind the table is Irving Alter of the Harry Alter Co., Chicago, who with F. M. Cockrell of AIR CONDITIONING AND REFRIGERATION NEWS is trying to get Mrs. J. M. Oberc to pose for the cameraman.

of it as efficiently as he handles a service job.")

In describing to the R.S.E.S. the advantages of being the local representative for a national service organization, Mr. Ambrose declared that the two main benefits which a service engineer might obtain by such a tieup are (1) free and expert training by the factory engineering staff; and (2) an assured income.

The Mills' service manager also pointed out that after the manufacturer's guarantee or contract expires on the equipment, the service man will in most every case be assured of getting the call for any future service work on the system.

What national organizations look for in searching out service engineers to take care of local work for them are reliability, promptness in answering calls, and the ability to give the factory the proper reports required.

A note of optimism about business prospects was sounded to the service engineers by G. E. Stedman of the Cramer-Krasselt Co., Milwaukee, who has done a great deal of work in surveying the potential market for electric refrigerators and other household appliances.

"We are in the rhythm of a new industrial recovery, and no 'fear psychology'—such as is being evidenced by some executives because of the drop in stock values—is going to stop it," he declared.

"All of the business indices are up. At the end of this year we will have had an increase in the national income of 12 billion dollars over what it was in 1933.

"In Cleveland recently an industrial group analyzed the air and found that there was six times as much smoke in it as there was in 1933."

A recent survey of 25,000 housewives, said Mr. Stedman, brought forth the facts that 30% of them are planning to buy a refrigerator in the coming year, that 4.63% of them

are planning to build new homes, and that 16.9% of them are planning to modernize their homes.

Another fact shown up by the survey was the fact that the housewife does not expect the long guarantee which has been adopted by household refrigerator manufacturers in recent years—that they do not expect a guarantee longer than that which they get when they purchase an automobile, for example.

"The insane emphasis on guarantees is waning," declared Mr. Stedman.

Mr. Stedman urged the service engineers to take advantage of their opportunities to create sales of more appliances. The service man, he said, can gain the confidence of the housewife much easier than a salesman, and he should seize upon such opportunities to promote the sale of new or added electrical appliances in every household which he enters.

Mr. Stedman advised the service men to sell quality and not price in their work, to carry enough parts to handle any emergency, to be clean and polite, to leave their name behind in some way after a first call, and to promote the sale of accessories.

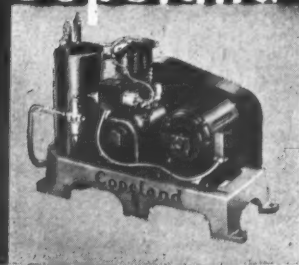
New officers of the R.S.E.S. elected for the coming year include: W. Hall Moss, Memphis, president; Claude A. Brunton, Huntington, W. Va., first vice president; Gordon A. Burns, Toronto, Canada, second vice president; H. T. McDermott, Chicago, secretary; S. A. Leitner, Kansas City, treasurer; R. L. Darby, Long Beach, Calif., sergeant-at-arms.

Directors of the society elected at the meeting were: C. Buschkopf, Beaver Dam, Wis.; C. O. McCauley, Pittsburgh; F. H. Roth, Chicago; C. P. Eich, Youngstown, Ohio; W. L. Drake, Indianapolis.

Registration at the meeting was close to 2,000 persons, many of these, of course, being manufacturers and jobbers.

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BRASS COPPER & ALUMINUM TUBING,  
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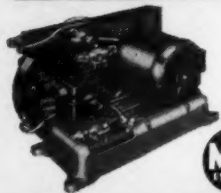
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TYPE  
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This unit is intended only for household or the smallest sizes of commercial systems. Brass shell with soldered end caps. Size of shell: 1" O. D. x 5" long. Weight 6 oz.

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"Built Right to Stay Tight"

Every style and size of forged flared tube fitting for the refrigeration industry is available from standard stock at Commonwealth.

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Special fittings made to order.

Commonwealth fittings are correctly designed, carefully machined, and tube seats are protected in shipping.

25 years of service to the industry.

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Commonwealth at Grand Trunk R. R.  
DETROIT, MICH.

## SERVICE METHODS

### Problems of Controlling Commercial Refrigeration Equipment Are Analyzed by Newton

CHICAGO—A comprehensive analysis of the nature and operation of the various methods of control for commercial refrigeration systems was given in the paper "The Application of Controls to Commercial Refrigeration" prepared by A. B. Newton of the Minneapolis-Honeywell Regulator Co. and presented before the final technical session of the annual convention of the Refrigeration Service Engineers Society held last week at the Stevens hotel here.

"In commercial refrigeration we usually are dealing with tailor-made installations," explained Mr. Newton. "Walk-in boxes, and often times fixtures, are made to fit the installation, and evaporator coils are chosen from standard units provided by various manufacturers.

"During the operating cycle of the condensing equipment frost is built up on the coils, and some provision must be made, if the job is to run continually day in and day out, to remove this frost periodically and thus maintain the capacity of the system."

Usually the equipment is designed to take care of the maximum load conditions and give a running time for the compressor of 14 to 16 hours per day, said the speaker. On practically all installations the load varies widely from day to day, and from season to season.

As a result this ratio of operating to idle time must be changed if proper temperature is secured. It is not desirable to have long shut-down periods during which no cooling is provided, and therefore controls should provide frequent operating periods even during the periods of light load.

#### DIFFERENCE IN PROBLEM

The control problems involved are, therefore, distinctly different from those met in household refrigerators. The household refrigerator is sold as a package unit, with an evaporator and complete condensing unit contained therein. The evaporator must be operated at a temperature low enough to insure freezing and holding of ice cubes and desserts. This has meant frosting of the evaporator, and the defrosting cycle is usually started manually.

"In commercial refrigeration we are dealing with various types of mechanical equipment applied to the fixtures," continued Mr. Newton.

"Until a few years ago bare pipe coils were common in commercial work. Very often these coils were refrigerated by ammonia, and thick accumulations of frost were allowable.

"With the advent of other refrigerants in commercial work, it was found that finned coils were superior to the bare pipe coils used with ammonia.

"The first installations of this type of coils were of the gravity circulation type, in which a large coil was placed in the fixture in such a position that the air it cooled would cause circulation, due to its increase in weight.

"More recently we have seen many installations in which the air is mechanically circulated over the

finned coils, and here again the problem of defrosting has been serious, and new control problems have been introduced.

#### EXPANSION VALVE

"With the changes in the types of coil and refrigerants used in commercial work, we have also seen a change from the float type of expansion valve to the thermostatic expansion valve. The thermostatic expansion valve is particularly applicable to coils and refrigerants which require high refrigerant velocity for efficient heat transfer.

"In using thermostatic valves it is desirable to maintain substantially constant superheat at various suction pressures, and several valves have now been placed on the market which accomplish this result.

"These valves, when properly adjusted, allow maximum efficiency from the evaporator under conditions of varying load, and thus have helped the control picture to some extent."

In stores which require a number of fixtures it has become common practice to supply the refrigeration for the entire group from a single condensing unit, Mr. Newton pointed out. This practice has become more and more common, until there are sometimes 6 to 10 fixtures operating from a single compressor.

"These multiple installations have introduced several serious problems, arising from the fact that the load in the various fixtures may vary independently," said Mr. Newton.

"Thus we may have a situation where the store owner placed a large amount of produce in his walk-in box, and works out of the walk-in box while cutting up his meat, preparing it for sale. The meat is then put in counter cases, and during the rush periods he works out of the counter cases, leaving the walk-in box closed most of the time.

#### USE OF SOLENOIDS

"This practice results in a heavy load on the walk-in box, while the meat is being prepared, and during this time the load on the counter cases may be very small. During the rush period the reverse situation is true—the heavy load being on the counter cases.

"Various methods have been advanced for securing uniform temperatures in all fixtures under these varying load conditions. Perhaps the most common system is the use of solenoid valves with individual thermostats in the fixtures.

"These problems are made still more difficult when some fixtures must be held at different temperatures from those required in other fixtures, and in this case two-temperature valves may be employed."

In the usual commercial job the temperature of the fixtures is between 30 and 50° F., or so, and when the compressor is operating, the evaporator temperature is normally below the frosting temperature.

It is, therefore, necessary to periodically defrost the evaporator and prevent the building up of a thick accumulation of frost on the cooling surfaces. Mr. Newton pointed out several reasons because of which defrosting is necessary:

1—The building up of a layer of frost on the evaporator surfaces acts as an insulator to the flow of heat from the fixture to the coil. As the frost layer becomes thicker and thicker, lower and lower suction

pressures are required from the condensing unit to do the same amount of cooling. As it increases in thickness the frost impedes the travel of air through the coil, and as the air velocity becomes lower, the rate of frosting increases.

These actions result in a marked decrease in the capacity of the refrigerating system, and if allowed to continue over a long period, control of the fixture temperature may be lost.

#### EFFECT OF FROST

2—The effect of frost on relative humidity in the fixture is rather marked. If defrosting is provided at frequent intervals before the layer of frost on the cooling surfaces has reached an appreciable thickness, much of the water which was accumulated on the surface will re-evaporate into the atmosphere in the fixture during the defrosting period.

When this condition exists the relative humidity in the fixture can be maintained considerably higher than it can be if a large amount of frost accumulates on the fins before defrosting occurs.

3—Accumulation of frost on the evaporator surface results in operation at a lower suction pressure with a marked decrease in the economy of the refrigeration system. Therefore, the more frequent the defrosting periods, the greater the economy of the system.

Since the defrosting action of the system is to a large extent dependent on the type of control that is used, Mr. Newton discussed three of the most common control systems used at the present time, touching upon the reactions which they produce in temperature and humidity conditions, and upon the service and adjustment required by these various methods of control.

#### Pressure Control

"One of the most common methods of controlling commercial refrigeration installations is by the use of a suction pressure controller. This control operates to start the compressor when the suction pressure has risen to a desired value, and to stop it again when it has reduced the suction pressure to the low limit desired.

"The outstanding advantage of this type of control is that when properly installed, the suction pressure may be allowed to rise sufficiently during each cycle to insure defrosting of the coils.

"That is, the cut-in pressure can be so chosen that for the refrigerant involved, the coil temperature will be above 32° before the control starts the compressor. Fixture temperature can be adjusted only by changing the control setting in such a manner as not to upset the defrosting action.

"Since pressure controls are often supplied as standard equipment on condensing units, this method of control is rather widely used.

#### DIFFICULTIES ENCOUNTERED

"In analyzing a large number of jobs with this type of control, it appears that there are several rather common difficulties experienced in its use.

"1—The suction pressure control merely operates to maintain the coil temperature within definite limits with regard to the load conditions on the fixtures cooled by the compressor. As a result the fixture temperature is seriously affected by the load conditions. Many service calls on pressure control systems are a result of temperature variations caused by placing large quantities of produce in the fixtures.

"2—The customer himself can not easily adjust the pressure control, since he is not acquainted with the theory of refrigeration nor construction of the control. With most of the controls now in the market, the adjustment requires a knowledge of the relationship between the cut-out and cut-in pressure. Even trained service men often have difficulty in reaching the desired adjustment.

"3—There is usually a large difference between the summer and winter loads on fixtures. As a result seasonal adjustment of the cut-out pressure is usually required to secure uniform fixture temperature, and since the customer can not make this adjustment himself, a service call usually results.

"4—The week-end and holiday temperature secured in the fixture is likely to be too low, if the fixtures are not used during this period. No fixed adjustment of the pressure control is possible during this period. (Concluded on Page 17, Column 1)

## THEY ALL LIKE . . . Flash Cooler

Three years ago a certain butcher purchased a Flash Cooler to refrigerate the walk-in box in his market. He liked it. He told his friends about it and since that time these friends have bought five more Flash Coolers.

That sort of thing happens every day. A friend tells a friend and another Flash Cooler is sold. You can't beat satisfied customers when it comes to boosting the reputation of any product and Peerless Flash Coolers SATISFY!

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## Minneapolis-Honeywell Engineer Makes Analysis of Common Methods of Controlling Commercial Jobs

(Concluded from Page 16, Column 5)  
trol can satisfactorily take care of this situation, and since weekly adjustment of controls is impractical, we often find difficulty from freezing of tender vegetables over the weekend.

"5—Since the coil frosts on each cycle, and the coil temperature reaches the same low value on each cycle, the relative humidity at light loads is often less than desired.

"6—If the condensing unit is in a location where it can become colder than the fixture, the pressure in the system can not rise sufficiently to cause the compressor to start.

### ADJUSTMENT PROCEDURE

"A fairly definite procedure can usually be followed in the installation and adjustment of a pressure control. A location for the control should be selected where it will be free from vibration, such as a wall or fixture, or even on the condensing unit itself if the unit is mounted on a firm foundation.

"If the pressure control contains a mercury switch, the control should be accurately leveled to secure proper operation. This leveling is usually accomplished by shifting the control in slotted mounting lugs. The low side pressure element is then connected to the suction line to the compressor at any convenient point.

"To insure that air is not drawn into the refrigeration system, it is a good practice to blow a small amount of refrigerant out through the tubing before the connection at the control is made tight.

"On most of the pressure controls now available, two adjustments are provided—one of which affects both the cut-out and cut-in pressure, and may be called the main range adjustment, and the other which determines the difference between the cut-out and cut-in pressure, and is called the differential adjustment.

"The differential usually adds to the cut-out pressure to give the cut-in pressure. With controls of this type the cut-out pressure should be adjusted to secure the desired coil temperature at the point of stopping the compressor. The differential

should then be adjusted great enough so that the cut-in pressure will allow the coil to rise above 32° before the controls cut in.

"Whenever the cut-out pressure is adjusted on an existing job, using this control, it is necessary to change the differential of the control an amount equal to the change which is made in the cut-out pressure. Thus, if it is necessary to lower the cut-out pressure 4 lbs., the differential should also be increased 4 lbs. at the same time, so that the cut-in pressure will still be about 32°, assuming the previous adjustment was correct.

### PRESSURE DROP EFFECT

"The pressure drop between the evaporator and the pressure tap where the control is connected to the suction line must also be considered in setting the cut-out point. The pressure drop will occur only during the operating cycle of the compressor and, therefore, the cut-out pressure should be lowered an amount equal to the pressure drop below the desired pressure in the coil at cut-out.

"The differential must also be increased a like amount in order to have the coil temperature rise above freezing when no pressure drop exists.

"A common method of controlling multiple systems is to operate the condensing unit by means of a pressure controller, using thermostats in the important fixtures to operate liquid line valves. If all fixtures have thermostats, they may also be connected in such a manner that the compressor does not operate until one or more fixtures require the cooling.

"Care must be taken that the cut-out pressure is high enough to prevent the fixtures alternately calling for cooling with resulting long operating periods and heavy frost accumulations.

### Temperature Control

"On some of the smaller commercial refrigeration jobs, we find a temperature controller used to start and stop the compressor—no pressure control being used. This control system has been used to some extent even on larger installations.

"The temperature control normally has the advantage that it gives a uniform fixture temperature under normal load conditions. However, as load conditions vary we often find serious trouble caused by frosting of the evaporator.

"Whether or not the evaporator defrosts on the "off" cycle is determined by the relative length of the "on" and "off" cycles of the compressor. In turn, the relative length of these cycles is determined to a large extent by the differential of the thermostat.

### DIFFERENTIAL ADJUSTMENT

"Thus we generally find it necessary to adjust the differential of a temperature controller so that it will be high enough to secure defrosting during the "off" period of the equipment.

"The differential required under the heavy load condition is usually different from that required under the light load condition and, therefore, we are often called upon to seasonally adjust the differential of the thermostat on temperature controlled jobs. This, of course, means extra service calls, since the customer does not understand the differential adjustment of the thermostat.

"Once frosting starts to occur the rate of frosting increases rapidly. Thus, if during an initial operating period a light coating of frost is obtained on the evaporator, and this coating remain during the "off" cycle, another coat of frost will be added during the next operating cycle. After several periods of operation the coating of frost becomes thick enough so that the suction pressure is materially reduced, and the resulting colder coil causes an increase in the rate of frost formation.

"It is possible to obtain almost solid icing of a finned evaporator, under these conditions, and serious service calls may result from this action.

"In the installation of temperature controls it is necessary to select a

location where the control will respond to the air temperature in the fixtures. On gravity jobs it is common practice to locate the temperature control in the cold air duct of the fixture.

"The exact location will depend on the characteristics of the particular fixture in which the control is placed. Where one is not familiar with the fixture, a remote bulb control is particularly applicable, since the bulb may be moved about until the proper location is found without changing the wiring.

"Blower type units offer a special problem as far as the location of the temperature controller is concerned. The controller should not be located directly in the air stream from the blower, and yet must be so located that it will respond rapidly to changes in the fixture temperature.

"Usually the best location appears to be on the side of the box adjacent to the blower, so that the air stirred up by the operation of the blower passes over the thermostat after it has come in contact with the opposite wall of the fixture.

### Pressure and Temperature Control

"A third system of control which is common at the present time is the use of a low-pressure control and a temperature control connected in series. With this arrangement the contacts in both the temperature control and the pressure control must be closed before the compressor can operate.

"This system provides a measure of the fixture temperature and secures uniform temperature under normal load conditions. Since frosting of the coil is sensed by the pressure element, serious frosting on jobs of this type is largely overcome.

"Such problems as seasonal adjustment and cold temperature on the week-end are largely eliminated if the initial adjustments are sufficiently accurate. Under normal load conditions the control of the compressor is obtained from the thermostat.

"Whenever conditions exist that cause the accumulation of frost on the evaporator, the suction pressure is lowered until the cut-out of the compressor is finally obtained from the pressure controls.

"The frost accumulation may go on for a large number of cycles with cut-out and cut-in of the compressor obtained from the thermostat before the suction pressure becomes low enough to cause the compressor to cut-out.

"Defrosting is not secured until the compressor is cut-out by the pressure control, and thus considerable frost accumulation may be obtained before a defrosting cycle. As a result the temperature rise during the defrosting cycle may be undesirably large, and there is also an adverse effect on the economy of the system and on the relative humidity secured in the fixtures.

"In an effort to secure frequent defrosting cycles, the cut-out pressure of the low-pressure controller is often adjusted with 1 lb. or 2 lbs. of the normal pressure obtained when the thermostat stops the compressor.

"This is a rather critical adjustment and, therefore, if an attempt is made to adjust the pressure control as closely as this to the normal cut-out pressure, seasonal adjustment of the cut-out pressure will also be required.

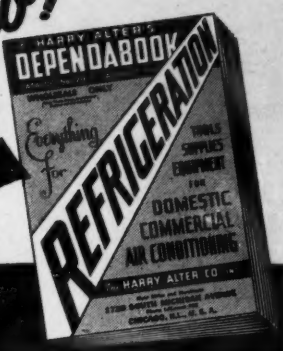
"Thus even with the combination of pressure and temperature control, using conventional instruments, seasonal adjustment is some times necessary and, therefore, servicing is required on installations of this type."

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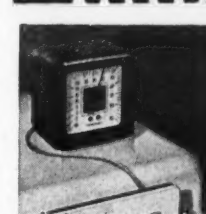
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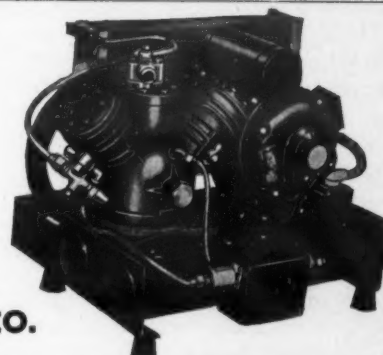
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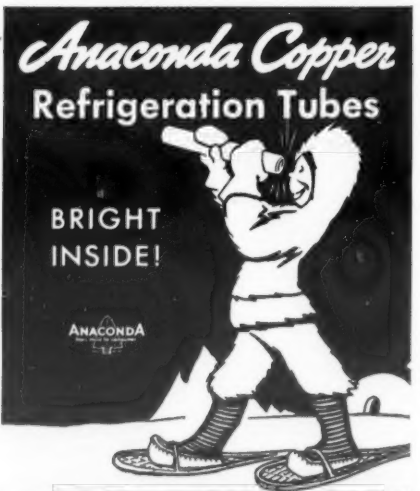
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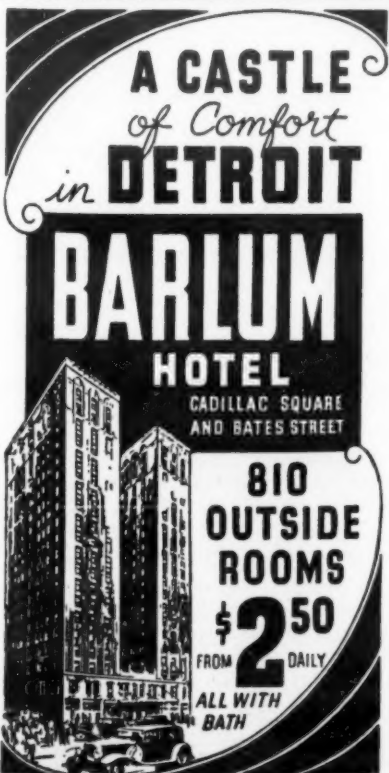
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# Exhibits of Refrigeration Supplies at Chicago

## Who's in the Pictures On This Page

(Editor's Note: The pictures on this and the facing page are of some of the exhibits at the Stevens hotel during the conventions of the service engineers, parts makers, and supply jobbers associations. The identification of the persons in the pictures will always be from left to right, unless otherwise specified.)

1. Inspecting Mueller Brass Co.'s exhibit were H. MacChesney of Sterling, Ill.; and P. O. Danke and C. M. Hamilton of the Steel Sales Co.

2. In the Virginia Smelting Co. booth we find W. V. Warner of the Northern States Power Co., St. Paul; and Leon Fey of Fey Refrigeration Service Co., Milwaukee.

3. One of the most popular spots at the exhibit was the picture-taking booth run by R. & H. Chemicals. There were just too darned many people lined up in the booth waiting to have their pictures taken to try to identify them.

4. Bill Aulsebrook of the commercial refrigeration division of Servel gives close attention as A. Reinhart of the Real Refrigeration Co., Milwaukee, explains a problem.

5. Margaret Blanchard of the Virginia Smelting Co. was visiting C. C. Grote in the Spoehrer-Lange Co. booth just in time to get in the picture.

6. Ansul Chemical Co., which has a reputation for the "different" in exhibits, this year came forth with an ingeniously designed contraption designed to show that its refrigerants make "square B.t.u." which, peculiarly enough, looked very much like African golfballs in their final form. The man on the right is (we believe) William Mahaffey of Automatic Heating & Cooling Supply Co., Chicago.

7. Visiting in the Jas. P. Marsh Corp. exhibit were E. C. Kluger of Marsh, Karl Agricola of the Fredericksen Co., Barrett Scudder of Marsh, and W. H. Malone of Berger-Malone.

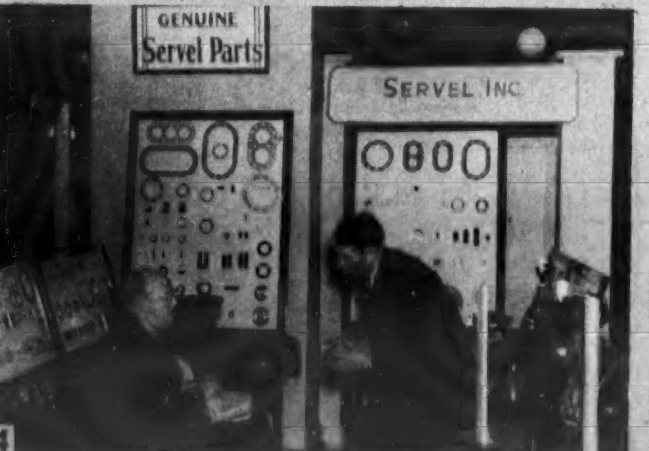
8. We missed the names of the two gentlemen sitting down at the left in the Wolverine Tube exhibit. The men standing are W. C. Gernhart and A. B. Hard of Wolverine, and A. F. Carroll of Automatic Products Co. Sitting in the foreground is Jack Colyer of Wolverine.

9. Jim Strachan and Jack Forbes of Kerotest play host to Jobber H. E. Adams of Memphis.

10. In the Minneapolis-Honeywell exhibit we find R. S. Stanton; R. W. Jolliff and E. L. Gedney, Jr., of the Fil-Pure Co., refrigeration and air-conditioning technicians, St. Petersburg, Fla.; C. C. Cochran and E. B. Burrell of Minneapolis-Honeywell.

11. In the Gilmer booth were Canadian visitors G. S. Pinnicks, R. A. Paton, and J. F. Holland, all of Flack Bros., Vancouver; R. D. Marshall, Delavan Engineering Co., Des Moines; and E. A. Goetter, Gilmer's Chicago manager.

12. C. S. Ruegg of the Ruegg Refrigeration Supply Co., Lincoln, Neb., looks over some American Injector Co. products under Frank Riley's guidance.



## Change in Definition And Trade Problems Debated by Jobbers

(Concluded from Page 1, Column 5)

St. Paul, chairman of a committee on membership requirements, brought out the fact that the matter of qualifications for membership needed further consideration with respect to two points: (1) the question of whether or not a refrigeration compressor might properly be included among the items which the jobber wholesales, and (2) the question of whether a jobber should operate or have any financial interest in a retail service business.

These matters were thoroughly discussed in open meeting when the matter of amending the by-laws came up for consideration. Recommendations were made for amending the by-laws on these and other points.

### BY-LAWS AMENDED

However, since a considerable number of changes were being considered in the by-laws, and the directors of the association are making special efforts to have the amended by-laws properly stated and with proper meaning so that so many changes will not be found necessary in the future, the amended copy of the by-laws is not ready for publication at this time. However, it is expected that they will be ready in time for publication in the next issue of AIR CONDITIONING AND REFRIGERATION NEWS.

Arnold Dessau of Melchior, Armstrong, Dessau Co., a director of the association and chairman of the association's manufacturers relations committee, presented a report on the suggestions concerning revision of certain distributing and discount practices on the part of manufacturers of various parts and supplies.

### PRACTICES CHANGES

Mr. Dessau's report covered three main suggestions:

(1) That the discount schedules on soft copper tubing should follow those on hard-drawn tubing.

(2) That discounts granted on belts should be on a quantity basis, with the further suggestion that the manufacturers work out some form of a national scale of discounts.

(3) That manufacturers of refrigerants work out a more satisfactory discount schedule.

### COPPER TUBE QUESTION

Practically every jobber present at the Nov. 2 session at which Dessau gave his report had something to say on the soft copper tube situation.

It appeared that one of the chief objections to present practices was the granting of quantity discounts on relatively small amounts of tubing.

The hard-drawn-copper tube schedule, it was pointed out, provides for a discount schedule which is as follows: 0 to 2,000 feet or 2,000 lbs.; 2,000 to 10,000 feet or lbs.; above 10,000 lbs.

It was felt that this schedule was desirable for soft copper tubing, with the further suggestion of making the mixing of sizes and lengths (1/4-inch, 1/2-inch tubing, etc.) permissible in buying of odd lots.

### V-BELT DISTRIBUTION

When the matter of V-belts came up, the remarks of several of the jobbers indicated that there was a wide variation in the distribution and discount practices on this item.

A recommendation was made that the manufacturers of belts be contacted for the purpose of developing a schedule of discounts that would apply on a national scale. Consensus seemed to be that there should be no discount off of the list given on quantities of less than 50 belts.

The subject of refrigerants evoked a considerable amount of comment from the jobbers other than the committee's recommendation that new and more generous discount schedules are desired. Complaints were voiced by some that competition from the

(Concluded on Page 19, Column 1)



# Conventions Were Greatest in Show's History

## Jobbers' Sales for Fiscal Year Set At \$7,500,000

(Concluded from Page 18, Column 5)  
factory warehouses of some manufacturers made it necessary for the jobber to sell certain gases at or below cost.

Some jobbers also brought up the matter of whether or not they were getting the poundage of gas out of the cylinders that they had paid for. It was pointed out, however, that this was a relatively simple matter to keep track of by use of a tagging or card index system.

One of the main pieces of criticism directed at the manufacturers was the assertion by a number of jobbers that the "manufacturer's discount" generally given to concerns that make a complete unit or products such as a display case, etc., was being to firms who were not truly manufacturing concerns, and also that in some cases concerns given such a discount were selling parts received at such a discount to their customers at their cost.

Concerning these criticisms the suggestion was made regarding the first that the makers of parts provide a definition of what constitutes a "manufacturer" in the sense of a concern that is entitled to a "manufacturer's discount."

Regarding the second, the suggestion was made that under the Robinson-Patman Act it might be possible to have the manufacturer set up a schedule of discounts on a functional or "use" basis, so that any parts not used by a company which bought them ostensibly for a re-manufacturing purpose, could not sell them to the trade as individual parts for less than a stated resale price.

### \$7,500,000 BUSINESS

Irving Alter of the Harry Alter Co., Chicago, and Clarence F. (Sandy) Pratt of the California Refrigerator Co., San Francisco, members of the financial committee of the association's board of directors, told the assembled jobbers that members of the association did a gross business of \$7,500,000 or more in the past fiscal year.

This estimate was made upon the basis of figures submitted to the financial committee for the purpose of working out a new schedule of dues. Total business done by all jobbers, members and non-members of the association, was estimated to be approximately \$10,000,000 for the past fiscal year.

Henry W. Merkel of the Merkel Bros. Co., Cincinnati, was elected president of the association, succeeding Robert H. Spangler of The Spangler Co., St. Louis.

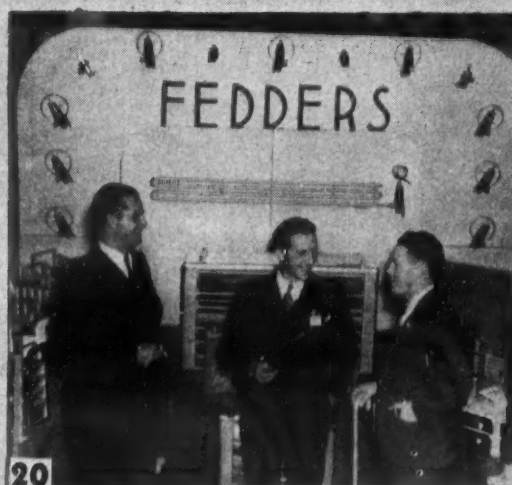
L. H. Gorton of the Machine Tool & Supply Co., Tulsa, Okla., was elected vice president, and H. W. Blythe of the H. W. Blythe Co., Chicago, retained his position as secretary-treasurer. The firm of Ortman, McClure, Hadden & Co., management engineers, will handle the detail work in the management of the association's affairs.

### BOARD OF DIRECTORS

Elected to the board of directors for new terms were the following: H. W. Blythe; C. F. Pratt; Arnold Dessau, Melchior, Armstrong, Dessau Co., New York City; F. H. Langsenkamp, Jr., F. H. Langsenkamp Co., Indianapolis; D. C. Lingo, the D. C. Lingo Co., Houston, Texas; F. A. M. Dawson, Refrigeration Supplies Co., Ltd., London, Ontario, Canada.

Mr. Dawson was elected after an amendment to the by-laws was passed providing for a Canadian member on the board of directors. The nomination of Mr. Dawson was made by the Canadian representatives present.

Directors whose terms carry over into this year are: Irving Alter; M. W. Applebee, Bursstein-Applebee Co., Kansas City; C. A. Kabat, Paramount Electrical Supply Co., New York City; and H. S. McCloud, Williams & Co., Inc., Pittsburgh. Mr. Spangler, as retiring president of the association, will also have a place on the board.



## Who's in the Pictures On This Page

(Note: The identification of the individuals in these pictures as given below will always be from left to right unless otherwise specified. For other pictures of some of the exhibits of refrigeration parts and supplies shown at the Stevens hotel in Chicago last week see pages 6 and 24.)

Since the pictures were taken informally and with a candid camera it was not always possible to get a suitable print, and thus these pictures represent only part of the total number of exhibits at the show.

13. T. C. Davis, H. W. Carlson, and L. C. Strobeck of the Dayton Rubber Co. were in their booth when the cameraman came along.

14. Henry Valve's exhibit was under the direction of Otto Henry and Raymond V. Scott when this picture was taken.

15. The cameraman got pieces of two exhibits in this picture. At the left we find G. W. Gauger and A. T. Stock of Commercial Coil & Refrigeration Co. explaining the operation of a Coltrol beer cooler. In the Alco Valve Co. exhibit J. A. Schenk is showing to S. K. Anderson of Young Radiator Co., just what an expansion valve does by means of a glass cooling coil, which showed just what happens to refrigerant in the coil, and which was one of the most popular displays at the show.

16. Entertaining Lou Grauer (farthest left) of Detroit Lubricator Co. was Perfection Refrigeration Parts Co.'s big convention staff of C. F. Toussaint, S. R. Wolff, E. A. Russell, David Davis, S. Ellison, and Henry Davis.

17. In the Imperial Brass Mfg. Co. booth were, among others, E. Winn, M. Buciak, and W. J. Hartman.

18. Ranco plays host to some visitors in its exhibit space. J. D. Merkle; F. W. Gillett, Refrigeration Parts Exchange; R. R. Dunlop; M. S. Vidis; and Elmer Notini.

19. The ladies liked the well-designed Automatic Products Co. exhibit. Inspecting it in this picture are Mrs. Harry Drownes, Mrs. George Monjian, and Mrs. Oscar Heide.

20. At the Fedders display we find Charles P. Rittling and Leo J. Freitas in conference with Robin Adair of Root Neal & Co., Buffalo supply jobber.

21. T. H. McGowen of the window ventilator division of American Radiator Co. examines a control device which Dean Swift shows him in the Penn Electric Switch Co. booth.

22. Conditions were nearly always a little crowded in the Detroit Lubricator booth. Here we find Willis Flinn of the Ballard Ice Cream Co., Indianapolis; Herbert Smart, Refrigeration Repair Co., Indianapolis; G. A. Wegner; R. R. Duncan of the Duncan Supply Co.; and Joe Kroll of Detroit Lubricator. The gentleman seated is possibly Francis House of the Borden Co., Boston.

23. One of the most popular men at the convention, Frank J. Gleason of Brunner Mfg. Co., and formerly secretary of both the parts manufacturers and the supply jobbers associations, flashes his famous smile on M. B. Oberholzer of the L. H. Gilmer Co., and gets a pretty good grin in return.

24. The brilliant lighting effects in the American Brass Co. exhibit makes E. Campion something of a "shadow man" in this picture.



## SERVICE METHODS

### Wile Lists Five Steps to Follow In Giving Efficient Service & Summarizes Field Complaints

CHICAGO—An analysis of service complaints, diagnosis, and remedies for systems using thermostatic expansion valves and low-pressure controls, which compared the service engineer with the trained physician in the importance of diagnosing troubles, was given in the paper "Service Analyzer" presented by D. D. Wile, chief engineer, refrigeration and air-conditioning division, Detroit Lubricator Co., at the final technical session of the annual convention of the Refrigeration Service Engineers' Society held last week at the Stevens hotel.

"There are generally five steps which you should take in rendering efficient service, explained Mr. Wile.

1. Listen to the complaint. "There is a definite reason why you were called on the job. The customer may think the machine is running too long or giving improper refrigeration. Determine how long the trouble has existed and if it came on slowly or suddenly. Don't be afraid to ask questions. The customer is usually pleased to know you are really interested in his complaint. Find out everything you can concerning the complaint."

2. Analyze the complaint. "Is the trouble due to improper design of the equipment, to misuse, or to something that has recently occurred? Changes in weather or service load may be showing up a design defect

which has always existed. Check the things complained about to see that they actually exist."

3. Check the operation of the system. "Put on gauges and if necessary use thermometers. Feel liquid line, suction line, and evaporator. Keep your eyes open for any sort of unexpected symptom. Is the evaporator completely refrigerated? Is the suction line cold due to refrigerant flooding back? Is there sufficient refrigerant? Has the airflow over the evaporator been obstructed? Is the motor cool showing that it has been running light or hot from hard work?"

4. Analyze the symptoms. "Think of all the possible things that might

cause the trouble. Whatever you do, don't go at the job with any fixed notions. Your trouble may be caused by any one of a number of things and it is your business to find which one is at fault.

"A doctor who removed the appendix every time his patient had a pain in the stomach wouldn't be any worse than the service man who removes the expansion valve every time the suction pressure is wrong.

"How many things can you list that will cause high suction pressure or low suction pressure? It would be wise to have such a list handy at all times."

5. Correct the trouble. "After you have found a fault and corrected it, make a further check to be sure no additional faults exist. It is not uncommon to find several faults at one time, as for instance shortage of refrigerant, leaking compressor valves and expansion valves out of adjustment.

"If for any reason you have tampered with the expansion valve adjustment and then found other faults, be sure and readjust the expansion valve back to its proper setting."

Probably no list will ever cover all the things that can go wrong with refrigerating systems, declared the speaker.

#### Common Causes of Service Complaints

An outline of practical information based on actual field service was then given as follows:

1. Shortage of refrigerant. "A shortage of refrigerant may cause unusual effects depending on other circumstances. On commercial jobs controlled by a pressure switch a slight shortage usually causes the machine to run too long and results in temperatures being colder than normal. However, if the expansion valve is not sufficiently oversized to pass the uncondensed gas the result is a slightly starved evaporator.

"Thus, a slight shortage may pass unnoticed except for a higher power bill. A real shortage, of course, causes loss of refrigeration along with either high or low suction pressure, depending on whether the liquid line and the expansion valve are sufficiently oversized to pass the uncondensed gas.

"A shortage of refrigerant can be detected by liquid line warmer than normal, especially where it enters expansion valve, head pressure lower than normal (this is not always a dependable indication unless you happen to know what the pressure is supposed to be), distinct hissing sound at the expansion valve, and by the use of sight glasses."

2. Excess refrigerant. "Excess refrigerant increases head pressure and reduces compressor capacity causing long operation and possibly warm evaporator. May cause damage to motor if it is not properly protected by overload cut-out.

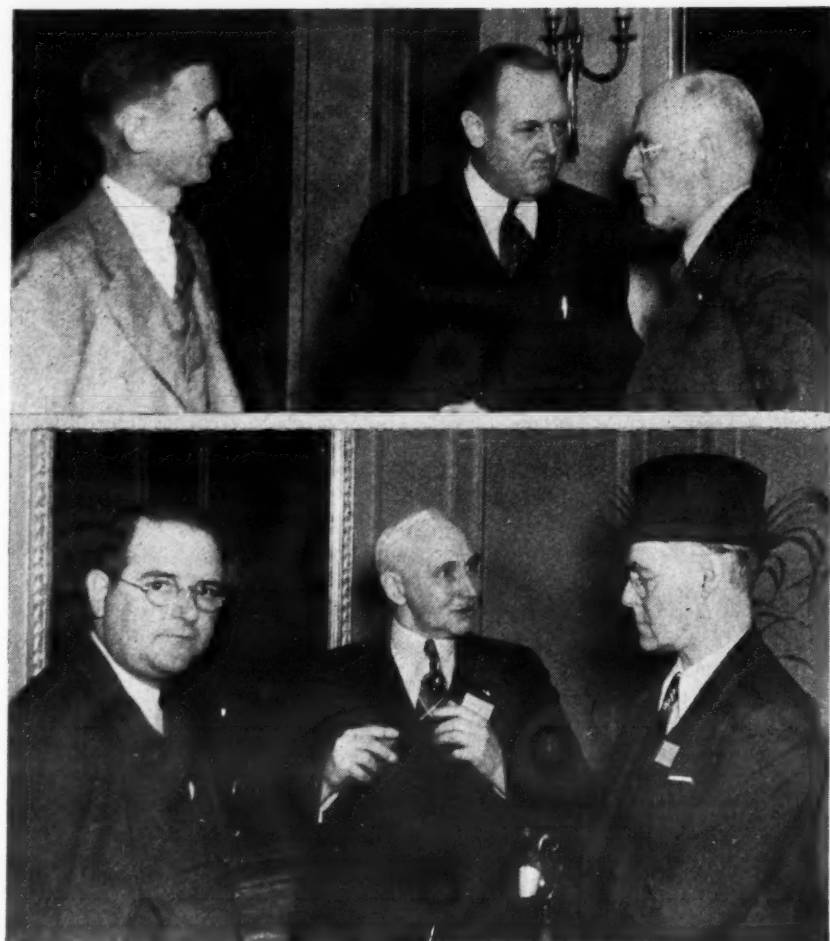
"Noncondensable gas in the system may cause this same condition. After blowing out noncondensable gas check for shortage of refrigerant.

"Excessive refrigerant results in high head pressure, high temperature at compressor discharge, with cold condenser and receiver."

3. Leaking compressor valves. "Leaking compressor valves cause excessive running time. A slight leak may cause temperatures lower than normal—a bad leak higher than normal.

"Leaking valves are detectable when turned over by hand the compressor feels weak, when discharge

### Hallway Conferences Are Typical of Conventions



(Above) E. L. Bengston, Republic Electric Co., Davenport, Iowa; H. W. Dittmeyer, United Wire & Supply Corp.; and J. F. Kimmel, Republic Electric Co., hold an impromptu conference in a Stevens hotel hallway.

(Below) H. S. McCloud, Williams & Co., Pittsburgh, is startled by the candid cameraman, but W. C. DuComb, Detroit jobber, was busy trying to convince the skeptical G. W. Booth, Refrigeration Supply Co., Richmond, Va.

shut-off valve is closed and pressure decreases quickly, and when compressors will not pump low vacuum or will not pump vacuum as quickly as usual."

4. Condenser obstructed. "On commercial jobs and especially unit systems such as ice cream cabinets, the flow of air over the condenser may be obstructed by merchandise stacked around the cabinet.

"The condenser should be cleaned occasionally to remove dirt accumulation. In certain localities water-cooled condensers must be periodically cleaned."

5. Strainer clogged. "Causes starved evaporator and low suction pressure. If strainer is at the condensing unit the liquid line will be cold, due to restriction in strainer. This condition also shows up if liquid line is too small or obstructed.

"To determine if the strainer is clogged, feel liquid line beyond line strainer to make sure it is not being cooled by pre-expansion. Install gauge in liquid line just ahead of valve and observe actual liquid pressure at valve. Check strainer in valve body to make certain that it is clear."

6. Loss of liquid head. "When the evaporator is located several floors above the compressor there is a drop in pressure in the liquid line due to the weight of the column of liquid. This pressure loss amounts to 10 lbs. for each 18 feet head of Freon, 17 feet head of SO<sub>2</sub>, and 26 feet head of methyl chloride," continues Mr. Wile.

"On water-cooled machines where head pressure is usually kept low or on air-cooled machines in cold places the loss in head may retard flow of refrigerant to the evaporator. The result will be low suction pres-

sure and possible starving of evaporator.

"To determine if this condition exists, calculate loss in head using known height of evaporators above compressor and figures given above for various refrigerants. Feel liquid line and observe any tendency to become cold as height increases.

"There is likely to be a hissing sound at expansion valve similar to obstructed liquid line or shortage of charge."

7. Expansion valve frozen. "This is one of the common reasons for expansion valve failure on methyl chloride and Freon systems. Moisture usually freezes the valve closed and starves the evaporator. It sometimes freezes it in the open position and causes flooding. A very small amount of moisture in the system can cause a lot of trouble. Simply because there is a drier in the system is no assurance that it is dry."

Driers must be fresh and amply large for the system, explains Mr. Wile. "Furthermore, if the moisture has frozen up in the evaporator or settled under the oil of the crankcase it is likely to stay there regardless of the drier.

"When applying the drier allow the system to warm up and then cycle the compressor by hand so as to circulate the refrigerant while keeping the pressure above the freezing point. It will help to obstruct the condenser during this time. Oil should be drained from the crankcase and replaced by a new charge.

"It is not at all uncommon for systems to operate for as long as a year without trouble and then suddenly freeze up, the moisture having finally worked out of the evaporator or crankcase." This is an unusual but not impossible condition, points out Mr. Wile. "Some parts to

(Concluded on Page 21, Column 1)

## THE BUYER'S GUIDE

New A.P. 44

Air Conditioned Model

OWN YOUR  
OWN BUSINESS  
IN  
1938



THRU' THE  
H. & H.  
"38"  
PLAN

Are You a REAL Commercial Refrigeration or Fixture Salesman?  
The H. & H. '38 Direct Dealer Plan Will Put You In Your Own Business.  
**MAKE LARGE DEALER PROFITS, (not small commissions)**

Our '38 Plan Offers:—

1. Direct factory-to-dealer exclusive franchise—floor models—sales kits—descriptive literature THAT SELLS.
2. Complete line—Dulux and porcelain display cases, streamlined and conventional models—market coolers—grocery boxes. Over 50 different models and sizes—make regular dealer profits.
3. Free—forceful mail advertising—DIRECT TO EVERY PROSPECT IN YOUR TERRITORY.
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Valuable Territories Now Available—ACT NOW!

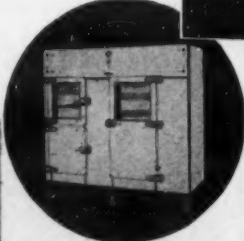
WRITE, WIRE COLLECT giving us all information: experience, sales ability and territory YOU NOW COVER.

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## DISTRIBUTORS WANTED

DISTRIBUTORS! Increase your sales and earnings on electrical refrigeration equipment by selling the Percival Line. Percival equipment meets every requirement of the modern food store.

For Mechanical  
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DESIRABLE TERRITORIES still available. Write for details of attractive, profit-making franchise.

**C. L. PERCIVAL COMPANY**  
DES MOINES . . . . . IOWA  
51 YEARS OF SERVICE 1886-1937

## PELCO DEALERS



PELCO is no "it takes a year to lay the groundwork" product—acceptance is almost instantaneous. Here are some reasons why: RICH APPEARANCE; AUTOMATIC—keeps itself supplied with FLOATING ICE as needed; DOUBLE UTILITY—the world's finest beverage cooler plus a roomy "dry-cold" refrigerator; REFINEMENTS in building—protected coils of seamless copper, non-corrosive oversize drain, heavy chrome-plated hardware; STURDY, rugged construction; SUPER-POWERED.

Send for MORE FACTS. Address Desk A-117

MANUFACTURED BY Refrigerator Division  
PORTABLE ELEVATOR MFG. CO.  
BLOOMINGTON, ILLINOIS, U.S.A.  
Sold in Canada by UNIVERSAL COOLER CO., of Canada, Limited, Brantford, Ontario

Reach Profitable Volume in 30 Days

**PELCO**  
Electric BEVERAGE  
and BEVERAGE-FOOD Cooler  
MAKES ITS OWN  
Floating Ice



MODEL 200  
BEVERAGE AND FOOD  
COOLER

MODEL 240  
BEVERAGE COOLER



## Some In-Between-Session Camera Impressions at the Meetings Of Refrigeration Parts Makers and Jobbers in Chicago



(1) Irving Alter of the Harry Alter Co., Chicago, a director of the Supply Jobbers Association and chairman of two important association committees, is cornered momentarily by Managing

Editor Phil Redeker of AIR CONDITIONING AND REFRIGERATION NEWS. (2) Friendly competitors in the cooling coil business, R. W. Kritzer of Peerless of America, Inc., Chicago; and

H. E. Rieckelman, Fedders Mfg. Co., Buffalo, N. Y. (3) Texas jobbers, D. C. Lingo of the D. C. Lingo Co., Houston, and U. C. Boyles, Refrigeration Supply Co., Dallas, Texas.

## Wile Summarizes Causes for Service on Units Using Thermostatic Expansion Valve And Low Pressure Control

(Concluded from Page 20, Column 5) consider in detecting this condition are as follows:

"If compressor is kept off until expansion valve warms up it will then control properly for a short time but may again freeze up. Don't try to heat valve while compressor is operating.

"Tapping the valve body may cause it to break loose for a while. This is a sure indication of moisture and the only sure way to correct the trouble is to remove the moisture from the system by cleaning out or using a drier. Don't damage the valve by hammering.

"A small amount of methanol poured into the liquid line may break valve loose temporarily. Don't depend on the methanol—moisture should be removed from the system. Don't use methanol in SO<sub>2</sub> systems."

8. Expansion valve lost charge. "Gradual loss of charge will cause starved evaporator and low suction pressure or short cycling. Complete loss of charge causes valve to close off.

"Be sure to check for frozen valve (7), clogged strainer (5), and valve location (9), before removing valve.

"If the bulb has lost its charge, warming feeler bulb will not affect operation. Note: This may also be true with clogged strainer or frozen valve. Allow valve to warm up, then warm feeler bulb and see if valve is open."

9. Expansion valve in wrong location. "If power element on valve becomes colder than feeler bulb it will cause valve to close and starve evaporator. Don't locate the valve directly under the coil or where it will be cooled too much. Capillary tube must also be clear of cold surfaces.

"Warm the power element and capillary tube with your hand. If power element is too cold this will

temporarily correct trouble. Valve location should be rearranged."

10. Expansion valve adjustment. "Purpose of the thermostatic expansion valve is to keep the coil completely refrigerated. Always keep that in mind when servicing a system.

"Adjustment of the valve merely floods or starves the evaporator. Expansion valves seldom change their adjustment of their own accord. When a system which has been operating satisfactorily suddenly changes, the chances are that expansion valve adjustment has not changed but something else has gone wrong.

"Always check everything else before attempting to adjust the valve. If a small turn does no good it is good assurance that something else is wrong." These are important points, adds Mr. Wile.

"Open valve so as to slightly flood evaporator; then turn back until evaporator is completely refrigerated without any flooding over into suction line.

"Detroit valves are accurately adjusted at the factory so as to maintain the coil completely refrigerated."

11. Feeler bulb in wrong location. "Bulb should be clamped to suction line at end of coil and must be unaffected by room temperature. Use sufficient drier tubing between bulb and outside air to prevent heat from flowing into the bulb and forcing the valve open during the shut-down period.

"Where several coils connect into a header the connections between bulbs and header must be long enough to prevent one coil from affecting the others.

"Where an air current flows over the bulb it should be shielded by wrapping with sponge rubber.

"Trouble of this nature often shows up with a change in the outside temperature," claims Mr. Wile. "An improperly placed feeler bulb

may get by unnoticed during mild weather and then cause a flood back during hot weather.

"Also, the job may be satisfactory during hot weather and an improperly located bulb cause starving of the coil during mild weather."

12. Expansion valve leak. "The expansion valve should close during the shut-down period. A leaking valve will cause the evaporator to fill up during the off-cycle and flood over at the start of the on-cycle.

"After checking the bulb location, adjustment, and possibility of freezing, remove valve and check on test set-up."

13. Evaporator too small. "When evaporator is too small or airflow over evaporator is insufficient, it causes low suction pressure, insufficient refrigeration, long running time, and excessive frost.

"To make sure that evaporator is completely refrigerated, check airflow for obstruction, check pressure control for proper cut-out point, and check load against manufacturer's rating for evaporator."

14. Compressor location too cold. "Compressors located in open basements may become colder than the fixture being refrigerated. Pressure in the receiver then becomes too low to force refrigerant into evaporator. Pressure switch may not cut-in or if it does evaporator may be starved."

15. Compressor too small. "Causes long running time or high suction pressure. Always check for other causes that might affect compressor capacity such as leaking valves, obstructed condenser, excess or shortage of refrigerant."

16. Evaporator surges. "It is now generally recognized that certain evaporators cause refrigerant to surge and give erratic results. Long lengths of large diameter tubing seem to cause most trouble of this type. Display case coils are often of this nature. The slow velocity in such coils permits refrigerant to accumulate and then surge out.

"This condition can often be improved or corrected by using an expansion valve with small size orifice," points out Mr. Wile. "The smaller orifice size prevents overfeeding of refrigerant during the periodic opening and closing of the

valve caused by the surges. The small orifice, therefore, tends to smooth out surges on coils which are subject to this type of fault.

"Use plenty of drier coil to keep suction line dry."

17. Suction line obstructed. "It is a common occurrence for ice to form in the clearance space between a copper tube and a flare nut on the end of the evaporator. Continued frost-back may likewise cause freezing to damage joints at other joints along the suction line.

"After repeated freezing the ice often expands to such an extent that the tube becomes restricted or completely blocked off. Usually the damage is not visible from the outside and is, therefore, difficult to locate.

"Another form of suction line obstruction which has occasionally occurred is the formation of a solid ice blockade inside the suction line near the evaporator or in the evaporator tube itself. Needless to say, such formation can happen only where an excessive amount of moisture is present.

"Any type of suction line obstruction causes the pressure within the evaporator to be higher than the gauge reading at the compressor. This condition causes short cycling or if the line is completely blocked off it may prevent sufficient build-up in pressure to start the compressor."

## Ranco Manual Gives Data On Servicing Controls

COLUMBUS, Ohio—A combined service manual and data book for all Ranco controls, replacement parts, and miscellaneous mounting equipment has been issued by Ranco, Inc. This pocket-sized pamphlet is known as Bulletin 733.

In addition to complete specifications of Ranco products, the new bulletin contains several pages of general information for refrigeration service men, and a few blank memorandum sheets.

Bulletin 733 is available to any service man upon request to the company. Approximately 1,000 copies were to be distributed among service men at the recent meeting of Refrigeration Service Engineers Society in Chicago.

## Cross Elected President of Mississippi Service Men

JACKSON, Miss.—Joseph T. Cross of the Home Appliance Co. was elected president of the newly organized Refrigeration Service Engineers Society of Mississippi at the initial gathering of the group here recently. J. P. Binns was named secretary and Jimmie Lawrence, treasurer.

## THE BUYER'S GUIDE

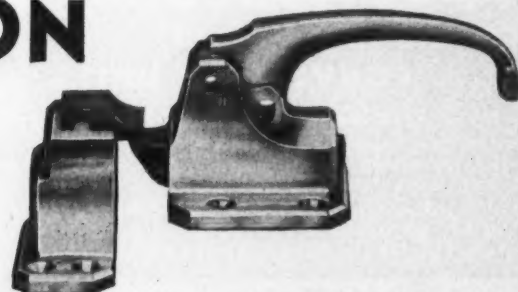
### Year in year out Profits

A few world famous users of Cordley Coolers are: Pacific Mills, Otis Elevator, Rogers Peet, Sun Oil Company, Sears Roebuck, Sweet Orr Over-all, American Optical.

Every time you sell a Cordley Cooler, you make a generous profit... a profit not dissipated in future service expense... a profit that sticks. Cordley Coolers are sturdily built, simple mechanically and designed solely and specifically for water cooling service... by the pioneer and oldest manufacturer of water cooling equipment. CORDLEY & HAYES, 141 Hudson St., New York City.

**CORDLEY Electric WATER COOLERS**

# KASON K-40<sup>A</sup>



**FORGED-BRASS LATCH**  
EQUIPPED WITH PATENTED, MICROMETER STRIKE



A turn of the screw raises or lowers the strike in its socket to make hair-line adjustments of offsets.

Acknowledged to be the finest, small latch available for refrigerator service. Ruggedly constructed of Forged-Brass with a super-serviceability far greater than mere necessity demands. Equipped with the patented Kason Micrometer Strike which permits hair-line adjustments of offsets.

KASON manufactures a complete line of Forged-Brass hardware for the refrigerator manufacturer. Write for Catalog No. 38.

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## WELDED STEEL REFRIGERATORS



**A COMPLETE NEW LINE FOR 1938**

Fastest selling line ever offered to the trade. Completely covers the field. Face-setting values in Top Display and Double Duty Cases—6, 8, 10 and 12 foot lengths... Two shelf cases... Delicatessen cases... Reach-In Boxes... Walk-In Coolers. All streamlined with striking modern beauty and engineered with latest improvements.

With this new Tyler line of commercial refrigerators you can step out ahead of all competition. Write today for free literature and attractive dealer proposition.

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**HE MADE \$20,000.00 IN 2 YEARS**

**THE NEW ECON-O-CASE IS A MONEY-MAKER For Koch Distributors**

**SELLING KOCH PRODUCTS**

**KOCH REFRIGERATORS**  
NORTH KANSAS CITY, MO.  
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There's big money in the Koch line for properly qualified distributors. If your territory is not already covered, send in your application. Attractive financing plan. Exceptional cooperation from factory.

The Koch line is complete, including both porcelain and Dulux finished display cases, refrigerators, and walk-in coolers. Koch manufactures all types of refrigerated fixtures for markets, restaurants, bakers, florists, hospitals and other institutions.



## SALES FIGURES

### 87,842 Household Electric Refrigerators Sold to Distributors & Dealers In September by 15 Firms

The following 15 member companies of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) reported household refrigerator sales for September, 1937: Apex Electrical Mfg. Co., Crosley Radio Corp., Fairbanks, Morse & Co., Frigidaire Corp., General Electric Co., Gibson Electric Refrigeration Co., Kelvinator Div. Nash-Kelvinator Corp., Leonard Div. Nash-Kelvinator Corp., Norge Div. Borg-Warner Corp., Servel, Inc. (export only), Stewart-Warner Corp.,

Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co. Member companies not reporting included: Jomoco, Inc., Merchant & Evans Co., and Sparks-Withington Co. The sales of the reporting companies do, however, include units manufactured for the following concerns: Major Appliance Corp., Montgomery Ward & Co., Potter Refrigeration Corp., and Sears, Roebuck & Co.

SALES FOR SEPTEMBER, 1937					
Domestic		Canadian		Other Foreign	
Quantity	Value	Quantity	Value	Quantity	Value
<b>Lacquer (Exterior) Cabinets Complete</b>					
1. Chest	78 \$ 3,964	7 \$ 340	27 \$ 1,424		
2. Less than 3 cu. ft.	37	2,207			
3. 3 to 3.99 cu. ft.	2,886	182,293	35	2,150	820
4. 4 to 4.99 cu. ft.	14,221	959,363	826	55,739	3,362
5. 5 to 5.99 cu. ft.	18,915	1,457,286	641	51,904	1,616
6. 6 to 6.99 cu. ft.	23,554	2,013,415	320	29,311	957
7. 7 to 7.99 cu. ft.	5,085	525,870	46	4,727	533
8. 8 to 8.99 cu. ft.	2,095	240,416	1	115	88
9. 10 to 12.99 cu. ft.	1	130			
10. 13 cu. ft. and up	15	3,102			
11. Total Lacquer	66,887	\$5,388,046	1,876	\$ 144,286	7,403
<b>Porcelain (Exterior) Cabinets Complete</b>					
12. Up to 4.99 cu. ft.	28	2,223	2	158	14
13. 5 to 5.99 cu. ft.	1,547	139,930	24	2,221	149
14. 6 to 6.99 cu. ft.	4,615	466,052	10	1,037	156
15. 7 to 7.99 cu. ft.	1,653	182,886	14	1,559	75
16. 8 to 8.99 cu. ft.	1,295	159,092	12	1,495	78
17. 10 to 12.99 cu. ft.	66	12,552	5	986	13
18. 13 cu. ft. and up	274	53,594	3	525	42
19. Total Porcelain	9,478	\$1,016,329	66	\$ 7,665	529
20. Total—Lines 11 and 19	76,365	6,404,375	1,942	\$ 151,951	7,932
<b>Separate Systems</b>					
21. 1/2 Hp. or Less	190	5,920	178	5,919	719
22. Separate Household Evaporators	350	4,710	93	1,393	73
23. Total Lines 20, 21, 22	76,905		2,213		8,724
<b>Condensing Units</b>					
24. 1/2 Hp. or Less	365	26,110	16	1,201	118
25. Cabinets—No Systems	42	4,612			7
26. Total Household		\$6,445,727		\$ 160,464	

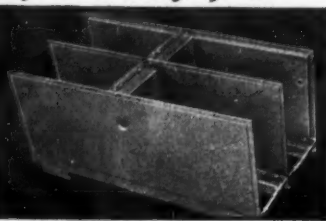
### KOLD-HOLD ICE CREAM CABINET CONVERSION UNITS

Modernize old equipment... provide much greater storage space for packaged goods... eliminate brine leaks and attendant odors... reduce weight and simplify installation... require a minimum of service... provide ideal temperatures under all conditions... cost less to operate... quickly and easily installed in any standard cabinet at small cost.

Write for Complete Facts

KOLD-HOLD MFG. CO. - LANSING, MICH.

As Outstandingly  
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KOLD-HOLD System  
of Truck Refrigeration



### HIGHEST EFFICIENCY Filtrine FILTERS & COOLERS WATER COOLERS COMMERCIAL — AIR CONDITIONING From 2 gals. per hour to 500 gals. per minute WATER FILTERS — STEEL PIPE COILS — SURGE TANKS FILTRINE MFG. CO., Brooklyn, N. Y.



Dayton V-Belts are the logical choice for all types of appliances, because they provide silent, dependable transmission—because their powerful grip prevents slippage—because they run smoothly without weaving, twisting or vibrating. A nearby distributor carries a complete stock.

THE DAYTON RUBBER MANUFACTURING CO.  
DAYTON, OHIO  
WORLD'S LARGEST MANUFACTURER OF V-BELTS

**Dayton**  
V-BELTS

## 11,616 Commercial Condensing Units Shipped to Dealers And Distributors by 15 Manufacturers in September, Nema Report Shows

The following report of commercial refrigerating and air-conditioning equipment sales for September, 1937, was made to the Commercial Refrigeration Section of the National Electrical Manufacturers Association (Nema) by the following 15

companies:  
Brunner Mfg. Co., Carrier Engineering Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Leonard Div.

Nash-Kelvinator Corp., Merchant & Evans Co., Norge Div. Borg-Warner Corp., Servel, Inc., Uniflow Mfg. Co., Universal Cooler Corp., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

SALES FOR SEPTEMBER, 1937					
Domestic		Canadian		Other Foreign	
Quantity	Value	Quantity	Value	Quantity	Value
<b>1. Bottle Water Coolers Complete</b>					
203	\$ 14,627	4	\$ 303	131	\$ 9,010
<b>2. Pressure Water Coolers—Complete</b>					
1,052	111,406	20	1,736	117	12,138
<b>3. Water Coolers—Low Side Only</b>					
85	5,264	1	67	7	371
<b>4. Ice Cream Cabinets—Complete</b>					
2,379	336,309	26	3,127	234	24,048
<b>5. Ice Cream Holding Cab. Only (Remote)</b>					
216	22,501	2	226	5	844
<b>6. Bottled Beverage Coolers—Complete</b>					
724	65,630	210	9,723	89	7,652
<b>7. Milk Cooling Cabinets (No High Sides)</b>					
38	2,717				
<b>8. Air Conditioners—Self-Contained</b>					
335*	77,652*			67	14,584
<b>9. Air Conditioners—Floor Type (No High Sides)</b>					
88	44,949			9	3,256
<b>10. Air Conditioners—Ceiling (Cooling Only—No High Sides)</b>					
110	25,825			14	2,977
<b>11. Air Conditioners—Ceiling Type (Equipped for Heating—No High Sides)</b>					
76	32,526	2	812	8	4,240
<b>12. Air Conditioners—Residential Type (No High Sides, Boilers, or Furnaces)</b>					
16	8,000				
<b>13. Condensing Units—Less Than 1/2 Hp.</b>					
985	53,893	20	1,310	282	16,632
<b>14. Condensing Units—1/2 Hp.</b>					
1,513	122,200	31	2,681	310	27,192
<b>15. Condensing Units—3/4 Hp.</b>					
1,039	106,246	19	2,185	172	20,365
<b>16. Condensing Units—1 Hp.</b>					
828	11,935	17	2,660	111	17,326
<b>17. Condensing Units—1 1/2 Hp.</b>					
480	75,484	8	1,510	63	11,506
<b>18. Condensing Units—2 Hp.</b>					
280	52,935	10	2,512	54	11,881
<b>19. Condensing Units—3 Hp.</b>					
131	30,407	1	249	15	3,943
<b>20. Condensing Units—4 Hp.</b>					
100	31,841	2	481	32	8,294
<b>21. Condensing Units—5 Hp.</b>					
63	29,144	1	218	6	3,340
<b>22. Condensing Units—7 1/2 Hp.</b>					
29	19,101			6	4,220
<b>23. Condensing Units—10 Hp.</b>					
22	19,457	1	380	1	763
<b>24. Condensing Units—15 Hp.</b>					
14	13,715			1	810
<b>25. Condensing Units—20 Hp.</b>					
18	21,684			1	980
<b>26. Condensing Units—25 Hp.</b>					
11	14,870			4	5,158
<b>27. Condensing Units—30 Hp.</b>					
10	13,659			1	1,400
<b>28. Condensing Units—40 Hp.</b>					
1	5,209			1	1,600
<b>29. Condensing Units—50 Hp.</b>					
1	2,234			1	2,234
<b>30. Total Lines 13 to 29, Incl.</b>					
5,525	\$ 724,014	110	\$ 14,186	1,060	\$ 135,820
<b>31. Total—Lines 1, 2, 4, 6, 8, and 30</b>					
9,548		370		1,698	
<b>32. Commercial Evaporators (Not Reported Above)</b>					
3,227	103,040	156	5,864	877	24,325
<b>33. Air Conditioning Evaporators (Not Reported Above)</b>					
97	21,916			4	3,740
<b>34. Total Commercial &amp; Air Conditioning</b>					
	\$1,144,072		\$ 36,044		\$ 243,005

\*Includes sales and credits reported by more than one company.

### New York, Pennsylvania & Ohio Lead States in September Sales

States and Territories	Quantity Shipped Low Sides
Alabama	1,042
Arizona	568
Arkansas	98
California	5,118
Colorado	213
Connecticut	1,459
Delaware	406
District of Columbia	1,156
Florida	1,569
Georgia	477
Idaho	467
Illinois	4,643
Indiana	1,407
Iowa	912
Kansas	62
Kentucky	1,149
Louisiana	1,155
Maine	170
Maryland	1,143
Massachusetts	3,698
Michigan	2,728
Minnesota	3,220
Mississippi	265
Missouri	1,962
Montana	45
Nebraska	14
Nevada	264
New Hampshire	3,881
New Jersey	77
New Mexico	14,039
New York	1,024
North Carolina	136
North Dakota	6,510
Ohio	430
Oklahoma	463
Oregon	7,175
Pennsylvania	573
Rhode Island	367
South Carolina	57
South Dakota	1,224
Tennessee	2,147
Texas	2,147
Utah	42
Vermont	1,221
Virginia	913
Washington	167
West Virginia	471
Wisconsin	25
Wyoming	
Total United States	76,905
Canada	2,213
Other Foreign (Including U. S. Possessions)	8,724
Total For World	87,842

\*Note: This summary includes adjustment figures reported by several companies which do not represent their actual September sales but are corrections to be applied to their first eight months totals to give their correct total apportionment among the various states for nine months.

### General Motors Declares Dividend of \$1.50

NEW YORK CITY—Directors of General Motors Corp. at a meeting Nov. 1 declared a dividend of \$1.50 per share on the outstanding common stock, payable Dec. 13 to stockholders of record Nov. 12. The regular quarterly dividend of \$1.25 per share was declared on the \$5 preferred stock, payable Feb. 1, 1938 to stockholders of record Jan. 10, 1938.

## 125 Manufacturers Report Orders Booked In September for Air-Conditioning Equipment Totalling \$3,947,432

The following report of orders booked by 125 manufacturers of air-conditioning equipment during September, 1937, is compiled by Director William L. Austin, Bureau of the Census, Department of Commerce.

Item	Value of Orders Booked		
	September 1937	September 1936	Total, 9 Mos. 1937
<b>Total</b>	<b>\$3,947,432</b>	<b>\$3,509,258</b>	<b>\$52,650,203</b>
<b>Air Conditioning Group—Total</b>	<b>1,194,296</b>	<b>1,141,917</b>	<b>28,507,574</b>
Unit Systems—			
Self-contained (shipped substantially complete)...	79,652	101,619	5,372,044
Not self-contained (shipped in sections) including refrigerating or cooling medium.....	462,990	381,456	7,972,065
Central-station Systems, excluding installation if installed—			
Human comfort (including refrigerating or cooling medium sold separately or otherwise for air conditioning)*	301,601	345,737	9,263,020
Industrial (including refrigerating or cooling medium sold separately or otherwise for air conditioning)*	43,184	34,177	692,287
Refrigerating or cooling medium sold to contractors or other distributing outlets (not manufacturing air-conditioning equipment) for air-conditioning systems, when such knowledge as to the application is available .....	82,414	108,295	2,803,911
Air washers, including pumps and motors and control where furnished .....	80,925	37,522	832,877
Air filters (not including sales of filters used with machinery other than fans) .....	42,841	19,021	318,845
Humidifiers .....	100,689	114,090	1,252,925
<b>Fan Group—Total</b>	<b>\$1,545,146</b>	<b>\$1,352,056</b>	<b>\$15,829,454</b>
Fans, including bearings, pulleys or couplings (if furnished)			
For public or semi-public buildings .....	171,637	134,795	1,640,263
For general industrial uses .....	449,260	407,172	4,650,692
For mechanical draft .....	229,302	196,511	2,558,888
For jobber stocks and unknown uses .....	67,069	77,468	1,266,736
Small housed and propeller fans—			
Direct connected small housed blowers with motors and control (merchandise motors) .....	219,878	178,803	1,476,189
Propeller fans, direct connected and belted (for ventilation only) .....	338,788	288,860	3,309,573
Driving mechanism for general fan use (not reported above)—			
Electric motors and controllers (manufactured or jobbed) .....	66,162	62,102	817,852
Steam engines (manufactured or jobbed) .....	3,052	6,345	109,261
Steam turbines (manufactured or jobbed) .....			
<b>Unit Heater Group—Total</b>	<b>\$1,207,988</b>	<b>\$1,015,285</b>	<b>\$ 8,312,775</b>
Industrial Type Unit Heaters, including heating element and motors where furnished—			
Equipped with blower-type (centrifugal) fans...	244,560	131,003	1,312,506
Equipped with propeller-type fans.....	651,020	643,889	3,375,029
School Room Type Unit Heaters, including heating element and motors and control where furnished..	64,523	62,645	1,132,575
Indirect Heating Surface (not including unit heater surface)—			
Steel pipe coil type (manufactured or jobbed).....	3,229	1,188	30,018
Cast iron type (manufactured or jobbed).....	3,010	17,392	117,633
Copper or aluminum type (manufactured or jobbed) .....	241,646	159,168	2,343,609

\*Includes incidental equipment, such as temperature, motor, humidity, and electrical controls, dampers, outlets, etc., as are sold with each.



## CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning and Refrigeration News, 5229 Cass Ave., Detroit, Mich.

### POSITIONS AVAILABLE

WANTED—Distributor's district sales representative on Servel Electrolux refrigerators in California. Wholesale and retail experience desirable. Write full information on your experience, past record, personal qualifications, compensation, etc., to Box 987, Air Conditioning and Refrigeration News.

### POSITIONS WANTED

ATTENTION REFRIGERATION Distributors. Are you in need of a thoroughly experienced man as manager of your commercial refrigeration department? 10 years' experience handling outstanding lines of commercial units and meat market equipment, etc. 43 years old, married. At present employed. Excellent business and character references. Box 986, Air Conditioning and Refrigeration News.

REFRIGERATION ENGINEER, fourteen years of experience in service and engineering on commercial and domestic. Capable of handling sales and sales training. Would like connection with manufacturer or distributor as field representative in either sales or service in Missouri or Illinois. Box 985, Air Conditioning and Refrigeration News.

AIR CONDITIONING engineer and sales manager desires a position with a responsible manufacturer or an established distributor. Have had 15 years' experience in design and selling of summer and winter air conditioning. Also 7 years' experience in the design and sale of commercial refrigeration. At present employed as district manager in 7 states for a large manufacturer. Would like a connection with a smaller territory and less traveling. Box 988, Air Conditioning and Refrigeration News.

### BUSINESS OPPORTUNITY

WELL ESTABLISHED refrigerator and appliance business doing nice volume. Distributors for commercial refrigeration and air conditioning, one of the leading makes. Doing an outstanding job in one of the most prosperous cities in the southeastern part of the country. Owner has other business interests. L. S. SACHS, Mutual Bldg., Richmond, Va.

### FRANCHISES AVAILABLE

DISPLAY CASES, walk-in coolers, and a complete line of reach-in boxes and market equipment. Will offer a franchise to commercial dealers. Long discounts with financing arrangements. To increase your commercial volume, write today for complete information. FOGEL REFRIGERATOR COMPANY, 16th & Vine Sts., Philadelphia, Pa.

SOLE DISTRIBUTOR and blowing contractor wanted in your territory to handle and install our line of Rockwool products. Unusual chance to tap the market, insulating new and existing homes. We cooperate and assist our dealers in starting. Large earnings and only small investment. Write Box 304, Wabash, Indiana.

### EQUIPMENT FOR SALE

SERVICEMEN & DEALERS—We have available eleven (11) DRB-3 G-E refrigerating units which have been used for water cooling light duty service. All units in operating condition. For quick disposition will close out at any reasonable offer. AIR COMFORT CORP., 1307 S. Michigan Avenue, Chicago, Illinois.

SERVICEMEN AND DEALERS save money. Buy "used as is" refrigerators. Spray and recondition them yourself. Kelvinators \$12.00; Frigidaires \$15.00; Copeland's \$14.00; Bohns \$14.00; General Electric \$15.00; Majestics \$12.50; Electrolux \$25.00; others \$10.00. Closeout ten 5 1/2 cu. ft. 1936 Stewart-Warners \$84.75 each. PILGRIM REFRIGERATION CO., 45-33 50th Street, Woodside, L. I., N. Y.

SERVICEMEN! Find out if you're losing money on any job before you lose it. Use our Work Tickets—a complete and simple record form, in duplicate, numbered blocks, 10 books @ \$1.25 each, 20 @ \$1.00, 40 @ 75¢. Send for samples. EWELL PRINT, 157 Highland St., Brockton, Mass.

### REPAIR SERVICE

DOMESTIC CONTROLS repaired. Ranco pencil types \$1.75. General Electric, Cutler-Hammer, Tag, Penn, Ranco box types \$2.00. Bishop Babcock, Majestic, Penn magnetic types \$2.50. Mayson and Detroit valves \$1.15. Each control individually calibrated to factory specifications. UNITED SPEEDOMETER REPAIR CO., INC., 436 West 57th St., New York City.

### PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

## AIR CONDITIONING

### Equipment Orders Gain in September

WASHINGTON, D. C.—Orders for air-conditioning systems and equipment during the month of September this year totaled \$3,947,432, a decrease of 2.3% compared with the \$4,041,508 booked in August, but an increase of more than \$400,000 over the \$3,509,203 reported for September last year, according to figures compiled by Director William L. Austin, Bureau of the Census, Department of Commerce.

Total orders booked during the first nine months of this year were \$52,650,203, a notable increase over the \$32,879,478 reported for the same months last year. Covered in the report are orders for air-conditioning systems proper, and for auxiliary equipment including fans and unit heaters.

In the air-conditioning group, orders for September totaled \$1,194,296, compared with \$1,141,917 during the same month last year. Total for this year's first nine months is \$28,507,974, compared with \$15,577,639 during the same period of 1936.

Orders for self-contained unit systems totaled \$79,652 for September, compared with \$144,976 in August and \$101,619 in September a year ago. Total for this year's first nine months is \$5,372,044, against \$2,060,653 for the same months last year.

Unit systems not self-contained had orders for September totaling \$462,990, compared with \$572,274 in August, and \$381,456 in September, 1936. For the first nine months of the year, orders for this type of equipment totaled \$7,972,065, compared with \$4,940,375 in the same period of last year.

Central station systems for human comfort had orders for September totaling \$301,601, compared with \$315,836 in August and \$345,737 in September of last year. Orders for the first nine months of 1937 totaled \$9,263,020, compared with \$4,476,306 during the same time in 1936.

Industrial central station systems for September had orders totaling \$43,184, and for the first nine months of the year of \$692,287, compared with \$34,177 in September, 1936, and \$652,151 for the first nine months of that year.

Air washer orders during September totaled \$80,925, compared with \$37,522 during the same month last year; air filter orders were \$42,814, compared with \$19,021 in September, 1936; and humidifier orders totaled \$100,689, compared with \$114,090 in September of last year.

Orders for fan systems and equipment totaled \$1,545,148 during the month, compared with \$1,352,056 during the same month last year, and unit heater orders were \$1,207,988, compared with \$1,015,285 in September, 1936. Total fan orders for the first nine months of this year were \$15,829,454, and unit heater orders were \$8,312,775 for the same period.

### Trane Demonstrates New Projection Unit Heater

DETROIT—The Trane Co., La Crosse, Wis., manufacturer of air-conditioning equipment, demonstrated its new projection unit heater at the National Guard armory here before 250 plant engineers and factory maintenance men from Michigan, Indiana, and upper Ohio.

One of the new circular, draw-through, ceiling-mounted Trane units was installed 35 ft. above the armory floor, from which point it effectively covered a floor area more than 200 ft. in diameter.

The demonstration was arranged under the direction of Norbert Downey, manager of Trane's unit heater division. Mr. Downey was assisted by Messrs. Leach, Cantwell, and Redhead, Trane branch office representatives in Flint, Detroit, and Toledo, respectively.

After the demonstration the group attended a dinner in the Barlum hotel.

### Paralysis Victim to Spend Winter in Conditioned Room

MIAMI BEACH, Fla.—Frederick Snite, Jr., Chicago infantile paralysis victim who has been given wide publicity as "the boy in the iron lung," will spend the winter in a specially air-conditioned room in his father's winter home here.

The air conditioning of this room marks the fourth time since the spring of 1936, when young Snite first fell ill of infantile paralysis in Peiping, China, that his family and physicians have resorted to Carrier conditioning equipment in an effort to speed the youth's recovery.

Every detail of the boy's room has been carefully worked out to afford him all possible protection. Special insulation keeps out dirt and sound. All air entering the room is cleaned and regulated for humidity and temperature as it comes from the air-conditioning outlets.

Special "toggle" switches have been installed to simplify operation of the system for the benefit of the nurses. The functions of cooling, heating, and ventilating may be performed individually or jointly as desired. An emergency generator has been installed to supply electricity for the conditioning system in case of failure of city power.

Equipment for this installation was placed in a special housing built onto the house in conformity with its architectural style. This housing is located directly under the sick room, and concealed ducts run along the outside of the house.

The installation was made by Belcher Industries, Inc., Carrier's Miami representative.

### Airtemp Exhibit Opened At N.Y. Auto Salon

NEW YORK CITY—Airtemp, Inc.'s exhibit of air-conditioning equipment in the International Automobile Salon of the Chrysler building here was opened recently at a special preview of Chrysler Corp.'s products presided over by Walter P. Chrysler, chairman of the board, K. T. Keller, president, and Byron C. Foy, vice president of the company.

Housed on the second floor of the salon, the Airtemp exhibit is composed of a display of units arranged around a blue and silver dais backed by a large glass replica of the Airtemp emblem, and a number of photo-mural enlargements of Airtemp equipment installed in the Hotel Pennsylvania and Madison Square Garden. The actual units are complete, cutaway, and in parts.

Featured are Airtemp's new high speed radial compressor, the "all-in-one" summer air conditioner for commercial use in shops and offices, the water-cooled room conditioner, the Airtemp oil burner, and the new winter air conditioner for small homes.

The salon itself is air conditioned by four separate systems totaling 80 tons of refrigeration. A 15-ton Airtemp unit on the second floor is enclosed in glass as a permanent operating display.

### Engineer Added to Staff of Tacoma Conditioning Firm

TACOMA, Wash.—Tacoma Engineering Co., local air-conditioning firm, recently augmented its executive staff by the addition of W. M. Milbury, heating engineer.

Mr. Milbury has had a wide background of experience with heating equipment and has made several market surveys for this type of equipment in the Pacific northwest.

### Bailey Heads St. Louis Office for Carrier

ST. LOUIS—J. H. Bailey, sales engineer, is in charge of offices just established here by Carrier Corp. The office is a distributing point for the company's air-conditioning equipment, home conditioners, and unit heaters.

### Livar to Direct Heating Design for Airtemp

DAYTON—Appointment of A. P. Livar as chief engineer in charge of heating design for Airtemp, Inc., air-conditioning subsidiary of Chrysler Corp., has been announced by A. C. Downey, Airtemp president.

Mr. Livar was formerly with the Reynolds Corp. as manager of the air-conditioning division. Prior to that he was vice president in charge of sales and manufacturing for the Richmond Radiator Co., Inc., where he designed the Richvar cast iron convector radiator and boiler. For seven years he was with the Trane Co. as New York manager.

Mr. Livar will supervise the design of Airtemp residential heating equipment.

He is a graduate of Georgia Tech and is a member of the A.S.H.V.E.

### Air-Conditioning Exports in September Are \$125,890

WASHINGTON, D. C.—Exports of air-conditioning equipment in September totaled \$125,890, more than double the \$53,330 reported for the same month in 1936, according to figures compiled by the machinery division of the U. S. Department of Commerce.

### Bulletin Gives Design Data On Independent Filters

CHICAGO—A new bulletin has been issued by Independent Air Filter Co. describing in detail its line of "Double Duty" air filters.

Complete data concerning these filters is offered, including capacity and dimension tables, and diagrams showing construction and operation of the units.

## OVER 40 YEARS OF PROFITS...

... and personal family service for our Distributors—More profit-sharing members are invited to join our large family

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## NEW SHERER Retardo... Baker's Box

Every progressive Baker should own a Retardo—it is new... different... and produces genuine RESULTS. For you, Retardo represents another SHERER money-maker with splendid sales and profit possibilities... a new field for compressor sales.

Write for information about the Retardo... about Sherer's valuable Case and Cooler Franchise... there are still some fine territories available.



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## STREAMLINED Beauty THIS LINE SELLS ON SIGHT

Weber brings the result of 35 years of successful manufacturing experience... America's most beautiful line of Refrigerator Cases and Commercial Cabinets Exclusive territories now open—Complete financing plan

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### 45 Cubic Feet of Storage Space!

... in this modern, gleaming white 6-door Model 650 Refrigerator. Sufficient shelf space for 21 cases of beverage in the three lower compartments, yet it occupies less than 14 sq. ft. of floor space.

Furnished with solid or glass type display doors in top section; 3" approved insulation, extra-height, re-tinned steel shelves, heavy chromium hardware, and your choice of DuLux or Porcelain finish.

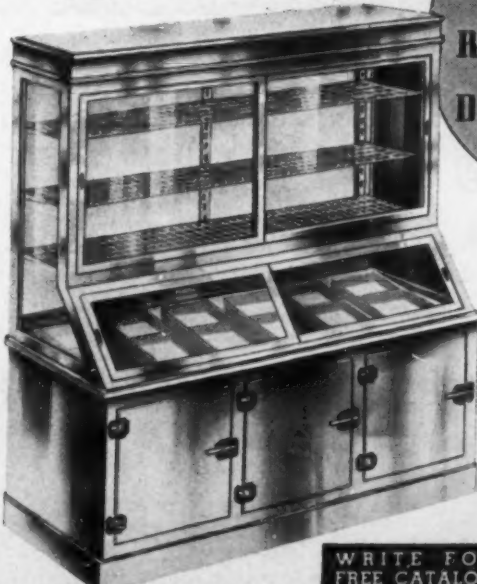
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